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Bulletin Georgia State College of Agriculture

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1913-1914



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Announcement 1913-1914

Register, Officers and Students
Session 1912-13

Entered as second-class matter December 21, 1912, at the post office at Athens, Georgia, under the Act of August 24, 1912. Issued monthly by the College.

UNIVERSITY OF ILLINOIS

AUG 23 1915

PRESIDENT'S OFFICE

The University extends a cordial welcome to all educational, agricultural, commercial, manufacturing, financial and industrial bodies, and bodies of like character, having for their object the welfare of the state, to use on special occasions, free of rent, such public buildings of the University as the Chancellor and President of the Agricultural College may approve.

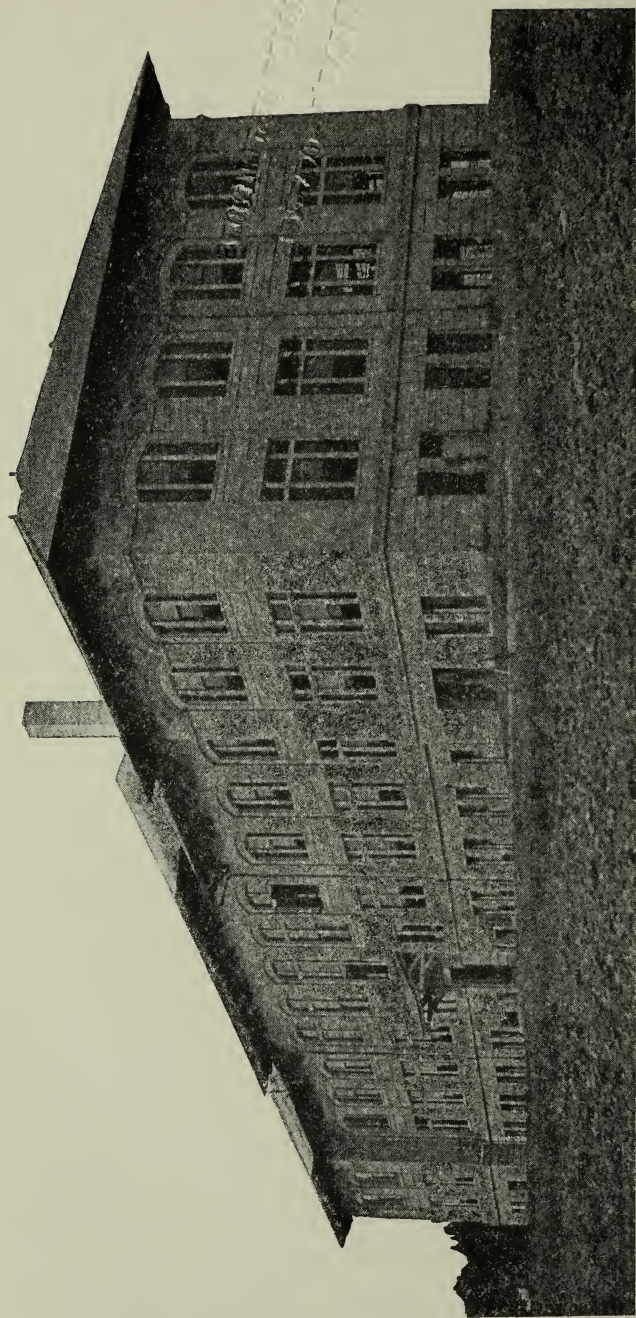
Announcement
of the
Georgia State College
of Agriculture

Athens, Georgia

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DEC 29 1920

For the Session of 1913-1914
With a Register of Officers and
Students for Session of
1912-13

Issued April, 1913, as Volume 1, Number 9, of Bulletin
Georgia State College of Agriculture



Main Building, Georgia State College of Agriculture.

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CALENDAR 1913-1914

June 30, Monday:	Opening of the Summer School.
August 2, Saturday:	Close of the Summer School.
September 13:	Meeting of the Faculty.
September 15:	First day of Registration.
September 15-18:	Examination for Entrance.
September 17:	Opening of the First Term.
November 27:	Thanksgiving Day.
December 23:	Close of the First Term.
January 5:	Opening of the Second Term.
January 5:	Opening of the Short Courses.
January 19:	Birthday of General R. E. Lee.
February 21:	Exercises in commemoration of the 113th Anniversary of the Demosthenian Society and the 94th Anniversary of the Phi Kappa Society.
February 22:	Washington's Birthday.
March 21:	Close of the Second Term.
March 23:	Opening of the Third Term.
April 25 - May 2:	Encampment of Cadets.
May 20:	Last date for submission of prize essays.
June 8:	Meeting of the Board of Visitors.
June 11:	Annual Session of the Board of Trustees.
June 10-12:	Examinations for entrance.
June 13, Saturday:	8:30 P. M., Sophomore declamation contest.
June 14, Sunday:	11:00 A. M., Baccalaureate Sermon.
June 15, Monday:	10:30 A. M., Exercises of the undergraduates representing the branches of the Univer- sity. 4:00 P. M., Military exercises and drill. 8:30 P. M., Champion debate between the Phi Kappa and Demosthenian Societies.
June 16, Tuesday:	10:30 A. M., Business meeting of the Alumni Society. 12 M., Oration before the Alumni Society. 4:30 P. M., Junior orations and delivery of Sophomore cup.
June 17, Wednesday:	Commencement Day. Close of the 114th annual session.

The State College of Agriculture

HISTORICAL STATEMENT.

The Georgia State College of Agriculture was organized in accordance with the Act of the General Assembly of the State passed July 21st, 1906. This institution is an outgrowth of the State College of Agriculture and the Mechanic Arts, which was founded as a co-ordinate department of the University of Georgia on May 1, 1872, upon the transference of the funds arising from the sale of Georgia's interest in the landscript to the trustees of the University. Its further endowment was made possible from time to time by additional appropriations provided through the generosity of the federal government. The State, however, realizing that agriculture represented its principal industry, decided by legislative enactment to differentiate and endow the work of the Agricultural College in order that it might more fully serve the chief interest of all the people.

The preamble to the Conner Bill contains the following statement, which sets forth fully the reasons for enlarging the work of the State College of Agriculture along both educational and research lines: "Agriculture is the principal industry of the State, and the main source from which the material prosperity of the State must come. Experience has demonstrated the great value of agricultural education in permanently improving the soil, multiplying its yield and increasing the value of its products. There is a growing demand by the people of the State for agricultural education, and for the practical benefits of scientific research in this line, and for improved methods in farming." The law provides that the State College of Agriculture shall be under the direction of a separate Board of Trustees, consisting of eleven men, three selected from the trustees of the University proper, three from the directors of the Georgia Experiment Station, including the Commissioner of Agriculture, and five from the State at large. The Board has the same functions and exercises the same authority as that of the trustees of similarly organized and coördinated divisions of the University, but is subject, in accordance with the provisions of the constitution of the State, to the general control of the University trustees.

BOARD OF TRUSTEES.**From the Trustees of the University.**

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JOHN T. NEWTON, Madison, 8th Congressional District,	Term expires Aug. 13, 1915.
DUDLEY M. HUGHES, Danville, 3rd Congressional District,	Term expires Aug. 13, 1913.

From the Experiment Station Board:

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JAMES J. CONNER, Atlanta, Commissioner of Agriculture,	Term expires June 26, 1913.
ROBERT C. NEELY, Waynesboro, 11th Congressional District,	Term expires Aug. 13, 1916.

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GEORGE GILMORE, Worthen, 8th Congressional District,	Term expires Aug. 13, 1916.
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JAMES A. THRASH, Greenville, 4th Congressional District,	Term expires Aug. 13, 1912,

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Messrs. Hardman, Newton, and McMullan.

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*GEORGE A. CRABB, B.S.A., Adjunct Professor of Agronomy.

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*In Extension service.

‡In Coöperation with U. S. D. A.

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ETHEL REESE, Secretary to President.

PHARES OBADIAH VANATTER, Superintendent of Field Experiments.

AMBROSE PENN WINSTON, Farm Foreman.

CLAUDE M. KIGER, B.S.A., Tutor in Horticulture.

ROSS RENFROE CHILDS, B.S.A., Tutor in Agronomy.

BONNELL HAROLD STONE, Student Assistant in Forestry.

WILBE RADFORD WILSON, Student Assistant in Farm Mechanics.

LANNIE GROOVER PROCTOR, Student Assistant in Farm Mechanics.

ELMO RAGSDALE, Student Assistant in Farm Mechanics.

*PEARL MORRIS, Clerk and Stenographer.

NORA SAYE, Clerk and Stenographer.

OLIVE BELL, Clerk and Stenographer.

*PEARL DICKENSON, Clerk and Stenographer.

*LILY JUHLIN, Multigraph Operator.

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JAMES G. OLIVER, Macon.

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CLIFFORD M. JAMES, B.S., Special Agent, Columbus.

*In Extension service.

‡In Coöperation with U. S. D. A.

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- STEADMAN VINCENT SANFORD, A.B., Junior Professor of Rhetoric and English Literature.
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CHARLES HOLMES STONE, Student Assistant in Drawing.

Special Lecturers.

BENJAMIN ALBERT CRANE, B.S., Cotton Grading.

ROBERT HATTON LOVEJOY, B.S., B.L., Forest Law.

GENERAL STATEMENT

The Georgia State College of Agriculture constitutes an integral part of the University system, and while it has certain buildings, lands and equipment set aside for the special use of its corps of instructors and students, its work in general is closely associated with the University proper, so that agricultural students enjoy all the advantages which a great university system affords. These advantages include instruction, advice from the professors in other colleges, use of the general libraries and scientific laboratories, and membership in the various class and society organizations. This is most desirable, since class-room training is but a part of a man's education.

OBJECTS OF THE COLLEGE.

The purpose and plan of the Agricultural College is, first to train agricultural students in the sciences pertaining to correct farm practice in order that they may receive a thorough and liberal education; second, to so arrange the course of instruction that men of limited means, opportunity and education may receive the greatest practical benefit by attending courses of varying length provided for in the College; third, to take an active part in the dissemination of agricultural knowledge among the farmers of the State by means of extension teaching, farmers' institutes, and bulletins and publications of a popular and practical nature.

AGRICULTURAL HALL.

The agricultural hall was dedicated on January 18th, 1909, with appropriate ceremonies. The building is 264 feet long by 72 feet wide, three stories in height, beautifully proportioned, and is, architecturally, a very pleasing structure. It is constructed of

cream-colored pressed brick, Bedford limestone for the foundation and terra cotta trimmings in designs symbolical of the purpose to which the building is devoted. The roof projects so as to form wide eaves and is covered with red tile. The building contains 60,000 square feet of floor space and is dedicated especially for instruction in agriculture and the prosecution of research work. It contains sixty large rooms, and few buildings devoted to agricultural instruction, afford better facilities. Provision has been made for administration offices, and for suites of rooms containing offices, private laboratories, class rooms, and also for student laboratories for the departments of agronomy, animal husbandry, dairy husbandry, cotton industry, horticulture, forestry, farm mechanics, veterinary medicine, bacteriology, entomology, agricultural chemistry and extension teaching in agriculture. Besides these several suites of rooms, there are four large class rooms, a library and reading room, and an auditorium with a seating capacity of four hundred. The building is heated by steam and lighted by electricity, and will have the necessary refrigerating apparatus for the manufacture of dairy products and the investigation of plant and animal diseases.

It affords admirable quarters for the students of the State College of Agriculture and those charged with the conduct of its work, the lack of which in years past has been responsible in large measure for the failure of agricultural education to make greater progress.

THE CAMPUS.

The grounds of the College of Agriculture are situated about a half-mile from the present center of the University. The College building is situated upon the brow of a commanding hill, where unusual advantages for landscape gardening and the making of a most beautiful campus are afforded. The grounds are being rapidly improved and already there is a large collection of specimen trees and shrubs about the building as well as model roads and walks. Those interested in landscape gardening and in studying the native trees of our state, as well as those imported from other countries, will find the campus instructive.

THE LIBRARY.

The library occupies a large, well-lighted room on the main floor of the Agricultural Hall and is fully equipped with Library Bureau furniture. A good collection has been made of standard books on all Agricultural subjects and of reference books, including Government publications, stud, herd and flock books of the leading Breeders' Associations, encyclopedias, bound bulletins and bound publications.

About seventy-five agricultural journals, both monthlies and

weeklies, a number of daily and weekly newspapers are received in the library and serve to keep the students in touch with the world of affairs.

The library is open for use of students from 9 a. m. till 6 p. m. on week days and books may be taken out for home use for a period of two weeks.

LABORATORIES

The success of instruction in agriculture will depend largely on the thoroughness and efficiency of the laboratory training. Large laboratories have been provided, with furnishings and equipment of the latest design and the best that can be secured for the particular end in view. Below will be found a brief description of these laboratories.

AGRONOMY LABORATORIES.

Two laboratories, occupying the east end of the main floor, are used by the department of agronomy. One of these is furnished with center and wall desks and laboratory tables for soil work. A complete equipment of soil tubes, shakers, centrifuges, water baths and ovens has been provided so that each student may work out independently the problems assigned him. The apparatus is used in a series of experiments designed to give the student an insight into the physical and mechanical condition of the various types of soils occurring in the state.

The other laboratory is devoted to the study of farm crops, including seed testing, cereal judging, grasses and forage crops. It is provided with wall cases for specimens, and laboratory tables for the use of the students. Various kinds of seed racks and seed-testing apparatus constitute a part of the equipment. A sufficient supply of sieves, magnifiers and microscopes are available for the prosecution of the various lines of work, and ample facilities are given all students who wish to specialize.

ANIMAL HUSBANDRY LABORATORIES.

In the College building about seven thousand feet of floor space has been set aside for laboratories to be used in theoretical and practical instruction in dairying. Sufficient funds have not been available to equip this department fully up to the present time, though enough apparatus has been secured to get the work well under way. In the butter making laboratory are various makes of separators, both hand and power, which not only give the student a knowledge of how to set up and operate centrifugal separators, but enable him to determine from actual tests the make, type and capacity of machines that will best meet his individual needs, both for factory and farm dairies. So far this laboratory has been equip-

ped more in the nature of a farm dairy than as a centralized creamery, and the churns and butter workers are of small capacity. Additional apparatus will have to be purchased next year, as the 86 men taking work in dairying the past year overtaxed the present equipment. Factory machines will be installed later.

The milk testing laboratory is a well lighted, spacious room in which are several models of Babcock testers, both hand and power design. The importance of a rapid and accurate means of determining the amount of butter fat in skim milk, whole milk and cream has become duly recognized. No one, whether producer of milk, or manufacturer of butter and cheese, can successfully conduct his business without being familiar with this test. Various methods for determining the lactic acid content of milk are available, and the students are made thoroughly familiar with this important phase of successful dairying. In addition to the above tests, facilities are provided for instruction in determining the solids not fat, as well as making curd tests.

In recent years, under prevailing market conditions, the necessity for sanitary, wholesome dairy products that will stand long storage and transportation by rail has increased to such an extent that the pasteurization of milk and cream has become one of the important branches of the dairy industry. For this reason a separate pasteurizing laboratory has been provided in the dairy department.

In the production of palatable, sanitary products which will command the highest prices on the open market, it is necessary that the producer have some means of controlling the temperature of the milk during different stages while it is being prepared for the consumer, or in the ripening, storing and holding of the different dairy products. Ample refrigerators have been provided for conducting experimental work along these lines.

Herd, flock and stud books of most of the leading breeders' associations have been secured, so that the students can become familiar with the different methods and forms of tabulating and keeping pedigrees. These books are used as a supplement to the work in animal breeding, to familiarize students with the combinations of blood lines that have gone to produce the highest type of animal.

On the College farm several breeds of live stock are maintained. Accurate records of their feed and production are kept, and the various experiments in breeding and feeding supplement and verify the work given in the laboratory and class room.

HORTICULTURAL LABORATORIES.

There are three laboratories in this department. A student laboratory and a private laboratory are in the Agricultural College building, and the third, a spraying laboratory, is on the horticul-

tural grounds, which are located about four hundred yards southeast of the building. The students' laboratories will accommodate about thirty men, and are fitted with the necessary apparatus. The private laboratory, containing a culture room, fume hoods and other essential fixtures, is reserved for research work pertaining directly to horticulture. In the office of the department, which connects the student and private laboratories, is a vault for the safe keeping of records and other valuable papers. Besides the above, there are a barn, a tool-shed and a spray house which afford ample room for the storage of all implements necessary on a fruit farm.

Cotton Industry Laboratory.

A systematic study of cotton fibre with a view to the improvement of the fibre and the increase in yield, depends upon laboratory facilities, and as the courses offered in the department of cotton industry will be largely laboratory courses, provision has been made for every facility for conducting the work. Opportunities are offered for combing and mounting the different varieties of cotton in a comparative study of individual merit, for an investigation of the basis on which classification and grades of lint cotton depend, and for ascertaining the breaking strength of the individual fibres of all varieties and grades. For a study of the nature of cotton fibre, the best and latest model student microscopes are used.

In connection with this department there is also a research laboratory to which graduate and special students have access. This laboratory is designed to work out problems of a more general nature as they arise in connection with the study of cotton breeding, the nature and cause of the loss in milling cotton, and the like.

Located as it is, in the center of the cotton belt, it is believed that this laboratory will prove ideally situated for working out all problems connected with the South's greatest industry—cotton growing.

FARM MECHANICS LABORATORIES.

The Farm Mechanics laboratories are located in the east end of the ground floor of the main building and in the new Farm Mechanics building just back of the main building. This latter building is a combination of brick, frame and reinforced concrete, is 40x100 feet inside measurements and two stories high.

The laboratory located in the main building is 33x70 feet, and is used for drawing and surveying. It is equipped with 50 of the latest drawing tables with parallel attachments, blue print frame and washing pan. Blue prints can be made up to 36x40 inches. With the present equipment ten parties may be put into the field for farm surveying. This equipment consists of five complete Bustom and Brady farm levels and compass combination instruments,

five Keuffel and Esser combination farm transits, one convertible engineering level, a transit for advanced work, a full line of tapes, pins, hatchets, poles and target rods for equipping each party. In addition nine plane tables have been added.

Farm Machinery Laboratory.

The farm machinery laboratory is located in the new Farm Mechanics building, and occupies the whole of the second story. It is equipped with a full line of the latest farm machinery. An acetylene plant has been installed and its adaptability to the farm home demonstrated for lighting, heating and cooking. A full line of pumps, hydraulic ram, windmill and gasoline engines illustrating the different water supply systems, will be installed.

A full supply of plumbing material, applicable to farm conditions, has been placed in the stock room and a plumbing stand for the practical work in installing plumbing and drainage on the farm is provided.

Forge Shop.

The forge shop, located on the ground floor in the east end of the Farm Mechanics building, is equipped with twelve of the latest models of the Buffalo Forge Company's heavy cast-iron forges. The blast and exhaust of these forges is taken care of with the proper sized fans located in the supply room. These fans are driven by an electric motor which also supplies power for the emery wheel grinder and polisher. Each forge has coal and water boxes and a full supply of forge tools. Additional equipment such as vises, drill, emery wheel, polisher and grinder, and benches, is provided.

Wood Shop.

The wood shop is located in the west end of the ground floor and occupies the same sized room as the forge shop. The equipment of this shop consists of benches for twenty-four students, planer, matcher, rip and cut-off saw, band saw, and turning lathe. Each bench is equipped with a full set of chisels, saw, mallet, try square, thumb guage, oil stone, oil can and bench brush. A bench hook is supplied with each full bench equipment. Each bench has a vise attached.

Display and Assembling Rooms.

Between the wood shop and forge shop is the display and assembling rooms, and the supply and tool room. In the tool and supply room is kept a full supply of wood, iron and steel for both shops; planes, saws, hammers, squares, etc., for the wood shop; drills, guages, callipers, etc., for the forge shop. The display and assembling room is used by the student as a place for putting together furniture and for doing other wood work, also for the display of models for farm buildings.

The class room for all the lectures and recitations is located in the main agricultural building, next to the drawing and surveying laboratory. It is equipped with fifty-two adjustable arm seats, lecture desk, blackboard, etc. The lecture desk has water, gas and sink connections.

VETERINARY SCIENCE LABORATORIES.

The laboratories of this department consist of several large rooms occupying the west end of the main floor of the College building. A small room opens into each of the large laboratories, the arrangement being adequate to accommodate the classes in laboratory work and for the storage of the various materials necessary.

The laboratories are well lighted, have a north exposure, are admirably suited for microscopic work, and are supplied with water, gas and electricity.

The histological and pathological laboratory is furnished with double biological desks which are fitted with drawers and compartments for microscopes and other instruments and accessories used by the students in the work of these courses. Microtomes, a Naples Water Bath, mounting media, stains and reagents, with the necessary equipment of glassware are supplied for the use of students. A large wall cabinet in this room contains an exhibit of specimens and models of diseased organs and parts.

A steel enameled instrument cabinet with a fine equipment of surgical instruments occupies a corner of the private laboratory.

A small room in the suite is fitted up as a pharmacy. Here is found a large stock of drugs and medicines used in veterinary practice, together with an equipment of percolators, filters, mortars and pestles, scales, pill tiles, etc., for the study of *Materia Medica* and Pharmacy. A case of specimens of nearly two hundred crude drugs is also a part of the equipment.

The bacteriological laboratory devoted to the study of disease producing germs is fitted with biological desks, wall cabinet, wall desk, and cabinet of microscopic slides. This laboratory is equipped with high power microscopes with the best oil immersion lenses, hot water bath, steam pressure sterilizer, hot air sterilizer, incubator, culture media and all necessary accessories.

The small room connected with this laboratory is so constructed that it is free from draughts of air and temperature variations are reduced to a minimum. This is used as an incubator room and is fully equipped.

An equipment of skeletons, models and charts of farm animals is used to illustrate the studies of anatomy during the warmer months.

THE VETERINARY HOSPITAL.

The veterinary hospital recently built is provided with box stalls for sick animals, bath stall, clinic room, operating room, dissecting room, office and dispensary, and room for attendant. A complete equipment of hobbles, side lines, slings, casting harness and operating tables is provided together with dental, operating and obstetrical instruments and appliances. Clinics at which sick or injured animals are treated free of charge are held at stated periods throughout the school year, and students are trained in the diagnosis and treatment of diseased animals and are required to prepare and administer medicines by the various methods. Especial attention is paid to instruction in the care of sick and injured animals, and the hygienic conditions which should surround them. A score card system of examination of animals for diseases, unsoundness and blemishes is used.

The dissecting room is used during the colder months in the study of anatomy and physiology. Students are required to dissect and study the various parts of farm animals and to observe the location of the internal organs and the principal blood vessels, nerves and other structures.

The manufacture of hog cholera serum gives opportunity for frequent autopsies on hogs. These furnish valuable material for study in contagious and parasitic diseases of swine. Much reliable information is imparted to students by this means.

HOG CHOLERA SERUM.

The 1911 session of the General Assembly passed a bill appropriating the sum of \$3,000 for the purpose of equipment and manufacture by the veterinary department, of Dorset-Niles hog cholera serum. This substance is the best known preventative of cholera in swine, and the manufacture by the College is for the purpose of instructing the students concerning swine diseases and the process of manufacture and administration. The serum is supplied to swine owners at cost of production on orders from the State Veterinarian. In some cases to avoid delay, serum is shipped directly to the swine owner accompanied by explicit directions for administering.

The 1912 session of the General Assembly appropriated an additional \$3,000 for maintaining and enlarging the serum plant to meet increased demands. A modern sanitary hog house capable of housing sixty hogs, has been erected. Serum is furnished at 2c per cubic centimeter.

AGRICULTURAL CHEMISTRY LABORATORIES.

The courses of instruction offered in this department are designed to prepare students for practical work. Well equipped laboratories are necessary that this may be done.

The laboratories occupy the west end of the top floor of the College building, the main laboratory being well ventilated and lighted from three sides. These laboratories are well equipped with new and modern desks, hoods, tables for microscopic work, and apparatus accommodating sixty to seventy-five students. Adjoining the main laboratory is a well-lighted balance room equipped with the most accurate balances.

Adjoining the instructor's office is a private laboratory separated from the main laboratory by the store-room which opens into both laboratories. This laboratory is equipped for the analysis of soils, feeds, fertilizers, waters, etc.

Each desk in the laboratory is supplied with gas, water and sinks. Ample facilities are offered for students specializing in the different branches of analytical work, such as soils, feeds and other agricultural products.

The library is supplied with a number of the best reference books on chemical subjects.

During the past year an additional laboratory has been equipped with modern apparatus for the analyses of the soil types of the State. The department is conducting a soil survey of the State in coöperation with the Bureau of Soils. All types in the several counties surveyed are collected and sent to the laboratory for chemical analyses.

THE COLLEGE FARM.

Contiguous to the main building and extending in the rear for more than a mile, lies the College farm, consisting of 830 acres. This land is varied in character; some of it rough and broken, while other sections are fairly level; portions are well wooded, and a diversity of soils is found. This diversity is not objectionable from one point of view. It will admit of tests applicable to the types of soil found in many sections of the state.

For a number of years a large part of the land had been rented and handled in a very careless manner. No crop rotation system had been followed, and very little live stock had been kept on the farm. As a result, the land was badly eroded in many places, and in poor physical condition. Winter and summer legumes are now being used for the purpose of adding nitrogen and humus to the soil. Attention is being given to the construction of terraces and drains, and much loose stone and trash has already been removed from the land. While these operations have been costly, they form an excellent object lesson for students in the reclaiming of exhausted soils, and it is only a question of time when the farm will be put on a still more highly satisfactory basis from both a physical and a financial standpoint.

The farm has been accurately surveyed and mapped; first with the idea of beautifying it as fast as funds become available by laying out the necessary roads and walks and locating such additional buildings as will be required from time to time with due regard to desirable landscape effects; and second, by the U. S. Department of Agriculture, so that all the soil types found might be defined and their physical characters ascertained. Thus when experiments are undertaken combining a physical and chemical study of the soils, results of accuracy and value may be expected.

THE COLLEGE BARNS.

The funds available for the erection of barns were so limited that these structures have been made very plain, though substantial. As the cost of these buildings is low, they can be copied advantageously by any farmer, a consideration of much practical importance. The dairy barn is 40x70 feet, and contains stalls for thirty-two cows and seven horses, besides one box stall. There is also an office, a milk room and a boiler house. A 135-ton silo is connected with the barn by a feed-mixing and weighing room, and there is ample space for the storage of rough feed. A bull house, the necessary paddocks for young stock, a blacksmith shop, machine shed, and individual hog houses have also been erected near the dairy barn.

A beginning has been made at erecting the main stock barn on the College farm. However, only a sufficient amount of money was available for building and partially completing the storage space of this barn. The part which has been erected is of the most modern construction, and nothing but the best material has been used. It is 40x120 feet, and 40 feet high. An office, bed-room and storage room have been provided for on the first floor, and the remainder of this floor will be used for grain and feed bins and as a mixing and grinding room. The entire second story is for roughage, and has a capacity of 500 tons of loose hay. This barn, when completed will represent an investment of approximately \$10,000. The herds have grown to such size that it will have to be completed within the next year.

LIVE STOCK.

The Dairy Herds.

The establishment of herds and flocks is an expensive undertaking, and the limited funds available made it necessary for the College to exercise care and discretion in the organization of this feature of the work. Substantial progress is being made, however. Fifteen pure bred Jersey females and two herd bulls are now owned by the College, and in addition there are thirty grade Jerseys in the herd. The Holstein herd consists of one bull, twelve pure bred females, and eleven grade heifers. Twenty three heifers are now in

milk which have been raised by the College since the herd was established in 1907.

The Beef Herd.

A considerable portion of the College farm is in a depleted and worn condition. Sufficient funds have not been available for rapidly improving this abandoned land. For the present it is being utilized as a beef ranch. The herd consists of twenty-four grade Hereford females of breeding age, and one registered bull, besides twenty three younger animals. This affords a valuable object lesson in the utilizing of unoccupied land, as well as in affording representatives of the beef type for stock judging by students.

The Hog Herd.

A herd of pure bred Tamworths (representatives of the extreme bacon type of hog), and Berkshires are maintained on the farm. Owing to the importance of this industry in the state, it is expected that sufficient funds will be made available for inaugurating breeding and feeding experiments along the line of pork production.

Work Stock.

A total of nineteen horses and mules is owned by the College farm. The mules are of superior quality and represent different types, including medium heavy plantation mules, sugar mules and heavy draft mules. The stallion and breeding mares are also used as farm workers, and all of the stock is used for teaching work in stock judging. On account of this requirement, the department hopes to maintain a greater number of animals, and more types than will be absolutely needed for farm work, and all of the herds should be increased rapidly.

Horse Breeding.

The stud consists of one pure bred Percheron stallion, two registered Percheron mares and three high grade Percheron mares, besides one filly. Since this breeding animals have proven such valuable work stock, more mares should be added to the stud.

On account of the importance of this work, both from the standpoint of increasing the work stock on the College farm, and the beneficial demonstration for the students and the farmers of the state, the work in this department will be prosecuted as rapidly as funds will permit.

THE DEMONSTRATION FIELD.

A field of twenty acres has been set aside for experimental work. This area of land has been subdivided into more than 1,000 plats, ranging in size from $\frac{1}{50}$ to $\frac{1}{10}$ of an acre. Through the medium of this experimental field, nature is constantly being asked questions, and new facts of interest are being brought to light by actual field

tests; the value of principles and theories developed through laboratory research is determined, and thus the education of the student is made more perfect and complete, since he not only receives instruction in theory in the class-room, but has the underlying scientific principles fully demonstrated to him in the laboratory, and sees the actual results which follow the application of these principles in farm practice.

Much attention will be given in the demonstration field to the development of strains of cotton, corn and other farm crops of better quality than those ordinarily grown. The relation of fertilizers to crop production, the influence of various methods of cultivation, the value of crop rotations, and the merits of new and interesting varieties of farm crops will be fully tested, and not only will they be made a part of the knowledge of the student body, but the result will be prepared in pamphlet form and distributed free of cost to the farmers of the state. This feature of the work will thus be made to serve several useful and important economic purposes, as well as provide a definite type of information for agricultural students.

In connection with the department of cotton industry, there will be special plats set aside for conducting experiments in cotton breeding, both by selection and hybridization, and students will be given opportunity to see the results of their own experiments. There will also be arranged a variety test of all the leading varieties of cotton. During the growing and harvesting seasons, students will be required to write full descriptions of varieties, in order that they may be able to distinguish one variety from another, and at the same time acquire the habit of studying the cotton plant.

ORCHARDS AND GARDENS.

About thirty-five acres of the College farm have been set aside for horticultural purposes. The land is rolling, and, with the exception of one or two acres of sand, which will serve well for truck crops, the soil is red clay. The field has been plotted and a variety orchard planted, in which all the varieties of apples, pears, peaches, plums and other fruits recommended for this section are well represented, so that a comparative study of their qualities can be easily made. As rapidly as funds will permit, a truck garden will be brought into shape, experimental plats laid out, a commercial orchard started. A plantation of small fruits is already well established. For the benefit of the fruit growers at large the horticultural grounds will serve as a testing field for all new varieties and also as a laboratory in which to experiment upon and demonstrate to the students all practices of orchard and garden management.

THE AGRICULTURAL CLUB.

The students of the College have an organization of their own, known as the Agricultural Club, which meets every two weeks. The purpose of the society is to obtain drill in parliamentary practice and in declamation and debate, as well as to discuss the scientific and practical phases of many important agricultural problems. The club publishes a Quarterly, which is not only distributed quite widely among the student body, but is circulated over the state. This publication forms a desirable medium of communication between the students and the farmers, and furnishes useful literary training to the students as well.

HORTICULTURAL CLUB.

The students interested along horticultural lines have organized a club which meets semi-monthly for the discussion of live problems in this field of agriculture. At the 1912 meeting of the State Horticultural Society the student members of the College Horticultural Society were rated active members of the state organization upon the payment of one-fourth of the annual dues of the State society.

FEES AND EXPENSES.

Attention is called to the remarkably low cost of a full collegiate year in the College. By rooming in the dormitories a young man can live at the University almost as cheaply as at home. This should encourage a large number of young men to avail themselves of the special advantages which the four-years course or the one-year course will confer upon them.

The expenses are as follows:

Room rent in College dormitories, \$2.50 per month. This includes electric lights, heavy furniture and care of room. The students provide fuel, mattress, bed furnishings and toilet articles. Board in Denmark Dining Hall costs \$10.00 a month on the co-operative plan. Room rent and board are paid monthly. Furnished rooms in private families may be secured from \$2.50 to \$5.00 a month for each occupant.

Laundry will cost about \$1.25 a month, and books about \$10.00 a year. All students are required to join one of the literary societies, the initiation fee being \$2.00.

Uniform for the military department will cost about \$16.00. This will last two or three years.

In short, the necessary expenses of a student for the college year of nine months need not exceed \$175.00 to \$200.00.

Expenses for short term students are in proportion to those for long course students. The cost of attending the Short Courses will vary from \$15.00 to \$25.00, depending on railroad fare.

PUBLICATIONS.

The Georgia State College of Agriculture through its extension department, publishes circulars of information on pertinent topics from time to time. These circulars are distributed free of cost to farmers residing in the State. A series of educational bulletins is now in course of preparation, and several will be distributed during the year. These will summarize in a practical manner the results of investigations, for example, with cotton and corn, and will prove especially valuable for reference to all progressive farmers. It is expected that this series will be developed from year to year until eventually a first-class reading course and farmers' library will be the result. A press service is also sent out to all the papers of the State. Thus the College is taking an active part in endeavoring to disseminate the vast fund of useful information which has accumulated as a result of the researches of the agricultural colleges and experiment stations within the last few years.

PRIZES AND SCHOLARSHIPS.

Through the generosity of the various friends of agricultural education the following scholarships and prizes have been offered to students. The coöperation of the good friends who have made it possible to offer these prizes is heartily appreciated.

LIST OF PRIZES

Awarded at Commencement, 1913.

Junior Scholarship, \$50.00 in gold, given by the Virginia-Carolina Chemical Co., Richmond, Va., to the student showing the greatest proficiency in all agricultural subjects for the College year 1912-13.

Sophomore Scholarship, \$40.00 in gold, given by the Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year 1912-13.

Freshman Scholarship, \$25.00 in gold, given by the Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year 1912-13.

One-year Agricultural Course, \$25.00 in gold, given by Virginia-Carolina Chemical Co., to the student showing the greatest proficiency in all agricultural subjects for the College year 1912-13.

\$25.00 in gold, given by the Board of Trustees to the student writing the best essay on "The Benefits which the Experiment Stations have conferred on Southern Agriculture."

\$25.00 in gold, given by the American Coal Products Co., New York, N. Y., to be divided into two prizes of \$15.00 and \$10.00 respectively, for the best essay on "Sulphate of Ammonia as an Economic Source of Nitrogen, and its Use in Agriculture."

Separator, valued at \$75.00, given by the DeLaval Separator Co., New York, N. Y., to the student showing the greatest proficiency in dairy work.

One Silver Cup, given by T. W. Wood & Sons, Richmond, Va., to the student in the one-year course writing the best essay on "Farm Crops."

\$10.00 in gold, given by H. G. Hastings & Co., Atlanta, Ga., to the student writing the best essay on "The Relation of Soil Improvement to Crop Production."

\$10.00 in gold, given by H. G. Hastings & Co., Atlanta, Ga., to the student writing the best essay on "The Influence of Seed Selection on Increased Yields."

Two Scholarships, valued at \$250.00 each, offered by the Southern Railway Company.

One Scholarship, valued at \$250.00, given by H. G. Hastings & Co., Atlanta, Ga.

One scholarship, valued at \$100.00, given by Hon. Gordon Lee.

One Scholarship, valued at \$100.00, given by the Atlanta Corn Show.

TERMS OF ADMISSION.

Students must be 16 years of age.

Four-year Degree Course: Admission to the four-year degree course requires 14 units. A student can enter, however, conditioned in 2 units, provided he is a graduate of a school that does not give full 14 units. Certificates will not be accepted for 12 units from those schools that require 14 units for graduation.

Required Subjects.

English, 3,	Geometry, 1,
Algebra, 1½,	History, 2,
Foreign Language, 2 units.	

Not more than 6-½ units can be selected from the following: Solid Geometry, ½; Agriculture, 3; Physical Geography, 1; *Drawing, 1; Physics, 1; Physiology, ½; Botany, 1; Zoölogy, 1; Chemistry, 1; *Manual Training, 2; *Commercial subjects, (Typewriting, Shorthand, etc.), 2; Additional—History, Mathematics, English, or Foreign Language, each 1.

*Not more than three units will be allowed in freehand drawing, manual training and commercial subjects.

Only one conditioned unit will be allowed in a required subject, with the exception of foreign language, where two will be allowed. Upon entrance, conditioned students must submit plan to the president showing how they will make up these conditions. If at the beginning of the sophomore year these conditions are not removed,

the head of the College will designate certain courses to be taken for their removal.

After a student has taken a college course in a subject, he cannot stand entrance examination on that subject to remove conditions, except for required subjects.

A certificate cannot be corrected after the beginning of the second term. Entrance examinations will be held at Athens and throughout the state on June 11th, 12th and 13th, and September 15th, 16th, 17th and 18th.

Summary of Work Required to Secure Above Units.

A study of English Grammar, Rhetoric, and a number of English Classics, as Shakespeare, Milton, Tennyson.

A study of Arithmetic, High School Algebra and Plane Geometry.

A study of two of the following history groups: Ancient History, English History, American History and Civics, Modern History.

A study of a foreign language. Any foreign language can be offered, but in case the student is conditioned he will be expected to take either German or French.

For further information ask for special bulletin on entrance requirements.

A unit's credit will be given for work in Physical Geography, Physics, Botany, Chemistry, Physiology, and $\frac{1}{2}$ unit in Zoölogy, where the work has covered a standard text and laboratory work.

One unit will be given for work in general agriculture, and one unit each in Agronomy, Animal Husbandry, and Horticulture. In each case the student must have had the required laboratory work.

Drawings must be presented by students who wish credit in either free hand or mechanical drawing or in the combination of the two, for one unit.

Students having finished approved courses in both wood and forge work that has covered a year's work of five periods a week of 1- $\frac{1}{2}$ hours each, are entitled to two units, or one unit for either.

An approved course in Bookkeeping, Shorthand, and Typewriting will be accepted as 1 unit. Double periods required.

For further information in regard entrance send for special bulletin.

One-Year Course. Students 18 years of age who have had at least three months actual farm experience are admitted to this course without examination, at the discretion of the executive officer of the College. Students should bring with them evidence of their farm experience, otherwise they will have to be examined on this point. They must, of course, have a good common school education in order to benefit by the instruction provided, and must be diligent and faithful in the prosecution of their studies. These students are not candidates for degrees.

SPECIAL COURSE IN COTTON INDUSTRY.

The department of cotton industry is a newly organized department in the State College of Agriculture, and is designed to meet the special needs of a cotton-growing community. Students, therefore, who are desirous of specializing in the work will have the opportunity of electing all the courses of instruction offered by the department, provided they select from allied subjects a sufficient amount of work to meet the University requirements. A special course of 30 days duration is offered in July to all who desire to specialize in cotton grading and related subjects.

CONFERENCE FOR FARMERS AND FARMERS' WIVES.

An annual conference is held during the month of January for the purpose of bringing the farmers and their wives more intimately into touch with the work of the College. The conference lasts for a week, and during that time a great variety of topics are discussed. The Farmers' Conference is a modified school, with its work so adjusted as to give the busy farmer and his wife a pleasant holiday outing, and at the same time enable them to acquire information which will be of service to them throughout the year.

SELF-HELP.

It is the purpose of the College to encourage students to work as much of their time as possible for both economic and practical reasons. In this way the cost to the student may be reduced considerably, and his knowledge of how to apply scientific principles in farm practice may be materially broadened. It is both important and necessary that labor with the hands should be recognized as honorable and essential to the welfare of an agricultural people.

Students in the College of Agriculture have the same opportunities of securing help from the Charles McDonald Brown Scholarship Fund as those in other departments of the University at Athens. The interest on this fund is lent to worthy young men on condition that they obligate themselves to return it with four per cent. interest. Applications for scholarship should be made to the Chancellor of the University. A special circular of information concerning the fund and blank forms of application will be supplied on request. This fund makes it possible for many young men of limited means to take advantage of the opportunity which the College offers for securing an education.

COURSES OF INSTRUCTION.

The four-years course provides for a liberal and thorough training along scientific lines in agronomy, soil fertility, animal husbandry, dairy husbandry, horticulture, farm mechanics and cotton industry. General training in chemistry, physics, botany, biology, English and

mathematics is also provided. Since the field of agricultural education is so broad that it is quite impossible for a student to pursue all the courses offered in four years, certain fundamental studies are prescribed, and the largest liberty of selection commensurate with the best interests of the student, permitted. In this way the student is enabled to select a course which is more in keeping with his taste, and at the same time he can obtain sufficient special training to fit him better for the special line of work he desires to pursue upon graduation.

The one-year course is provided for men who have only a limited amount of time and money at their disposal, and who in many instances have not the fundamental training which would enable them to pursue a four-years course of study advantageously. Men of this class, however, who desire to farm, can improve their knowledge and ability to manage farm problems intelligently by pursuing this course, at a moderate cost. Naturally, the training provided for in this course is of a more restricted and practical nature, as its character and intention make necessary.

The three-months course and the ten-day courses and conferences are provided for those actually engaged in farming or interested directly or indirectly in it who desire to obtain the largest amount of practical knowledge which they can apply immediately and with profit, at a minimum of cost. These courses confer great benefits upon all who pursue them, and are to be commended particularly to men varying in age from 25 to 60 years who have not had the benefits of agricultural training in the past, and are therefore at a loss to know where to look for information and very often how to apply it successfully even after they have acquired it.

DEGREE.

The degree of Bachelor of Science in Agriculture is conferred on those who complete the four-year course. Those who desire special information relative to any part of the course may obtain it by writing to the college authorities. An outline of the degree course is as follows:

BACHELOR OF SCIENCE IN AGRICULTURE.

Freshman.		Sophomore.	
Agronomy 1, 2 - - - -	2 hrs.	Animal Husb. 2, 3,	
Animal Husbandry 1, - -	1 "	4 and 5 - - - - -	4 hrs.
Farm Mch. 1, 2, 3, 4, 5,	3 "	Botany 1, - - - - -	3 "
Horticulture 1, 2 and 3, -	3 "	Agr. Chemistry 1 and 2,	4 "
English 1, - - - - -	3 "	History 2 or 4, - - - -	3 "
Chemistry 1, - - - - -	3 "	English 2, - - - - -	3 "
Mathematics 1 and 2 - -	3 "	Physics 3 or 5, - - - -	3 "
Military Science - - - -	1 "	Veterinary Science 1, 2, -	3 "
<hr/>		<hr/>	
19 hrs.		23 hrs.	

General Agriculture.

Junior.		Senior.	
Agr. Chemistry 2b and 3b,	4 hrs.	Agr. Chemistry 4b,	4 hrs.
Agronomy 5, 6,	4 "	Animal Husb. 6, 7, 8,	3 "
Agronomy 3, 4, }	3 "	Veterinary Science 3, 4,	3 "
Farm Mch. 6, 7, }		Cotton Industry 4, 5,	3 "
Botany 2,	4 "	Farm Mech. 8, 9,	1 ½
Bacteriology }	3 "	Forestry - - - - -	1 ½
Entomology }		Elective - - - - -	6 hrs.
Elective - - - - -	3 "		
20 hrs.		22 hrs.	

Agronomy.

Agr. Chemistry 2b and 3b,	4 hrs.	Agr. Chemistry 4b,	4 hrs.
Agronomy 5, 6,	4 "	Agronomy 7,	4 "
Agronomy 3, 4, }	3 "	Cotton Industry 7,	4 "
Farm Mch. 6, 7, }		Farm Mch. 8, 9,	1 ½
Cotton Industry 4, 5,	3 "	Forestry 3,	1 ½
Bacteriology }	3 "	Elective - - - - -	6 hrs.
Entomology }			
Elective - - - - -	4 "		
21 hrs.		21 hrs.	

Animal Husbandry.

Agr. Chemistry 2b and 3b,	4 hrs.	Agr. Chemistry 4b,	4 hrs.
Animal Husb. 6, 7, }	3 "	Animal Husb. 8, 9,	6 "
Poultry Husb. 1, }		Veterinary Science 5, 6,	3 "
Vet. Medicine 3, 4,	3 "	Farm Mechanics 8, 9,	1 ½
Agronomy 5, 6,	4 "	Forestry 3,	1 ½
Farm Mechanics 6, 7,	1 "	Elective - - - - -	6 hrs.
Bacteriology }	3 "		
Entomology }			
Elective - - - - -	3 "		
21 hrs.		22 hrs.	

Horticulture.

Agr. Chemistry 2b, 3b, or		Agr. Chemistry 4b, or	
Botany 2,	4 hrs.	Botany 6,	4 hrs.
Horticulture 4, 5, 6, 7,		Horticulture 10, 11, 12,	6 "
8, 9,	6 "	Cotton Industry 5,	1 "
Farm Mechanics 6, 7,	1 "	Farm Mch. 8, 9,	1 ½
Agronomy 5, 6,	4 "	Forestry 3,	1 ½
Bacteriology - - - - -	1 ½	Elective - - - - -	6 hrs.
Entomology - - - - -	1 ½		
Elective - - - - -	4 hrs.		
22 hrs.		20 hrs.	

Chemistry.

Agr. Chemistry 2, 3,	9 hrs.	Agr. Chemistry 4	9 hrs.
Agronomy 3, 4,	2 "	Animal Husb. 6, 7, 8,	3 "
Agronomy 5, 6,	4 "	Cotton Industry 6,	1 ½
Bacteriology - - - - -	1 ½	Geology - - - - -	1 ½
Entomology - - - - -	1 ½	Elective - - - - -	6 hrs.
Elective - - - - -	3 hrs.		
21 hrs.		21 hrs.	

Foreign Language.

Students who do not present two units of a foreign language at entrance may take a foreign language in the Freshman and Sophomore years, and carry over Mathematics and Physics into the Junior and Senior years.

Those desiring to study medicine may continue the study of French and German in the junior and senior years, and thus prepare themselves for entrance into the highest grade medical schools of the United States.

Laboratory Periods.

In the College of Agriculture laboratory periods count one hour for two, and are included on that basis in the number of hours required.

Changes in Courses.

When changes are made in the courses, students may graduate under the curriculum in force when they enter or under the new curriculum, provided they conform to all of its requirements.

Electives.

The courses are arranged so that students may pursue a general course in the Junior and Senior years or specialize in Agronomy, Animal Husbandry, Horticulture, or Chemistry. Students who desire to specialize must elect a group in the Junior year and take the coördinate group in the Senior year. Before registering they must submit a written statement of electives for the year to the head of the department from which their group is chosen. Students who specialize will be required to write a thesis before graduation. The thesis must be on a topic related to the group selected in the Junior year.

BACHELOR OF SCIENCE IN FORESTRY.

The degree of Bachelor of Science in Forestry is given upon the completion of the studies outlined below. These studies have been chosen for their cultural as well as their professional value.

It is probable that the strictly professional studies will in the future be made post-graduate work, leading to the degree of Forest Engineer (F.E.); but at present only the bachelor's degree is given.

Note.—Candidates for this degree who do not offer two units in foreign language at entrance, must take a foreign language in the Freshman and Sophomore years in addition to the scheduled work.

Freshman.		hrs.	Sophomore.		hrs.
Shop Work (Mch. 1)	- - -	1½	Forest Surveying,		
Drawing (Mch. 2 and 2a),		2½	(Mch. 5a) - - - - -		4
English 1, - - - - -		3	Saw Mill Construction		
History 2 and 3, - - - - -		3	(Mch. 5b) - - - - -		
Mathematics 1, 2, - - - - -		3	English 2, - - - - -		3
Physics 2, - - - - -		4	Mathematics 3, - - - - -		3
Botany 1, - - - - -		4	Botany 2, - - - - -		4
			Chemistry 2, - - - - -		4
			Forestry 4, - - - - -		3
		21			21
Junior.		hrs.	Senior.		hrs.
Saw Mill Machinery,			Soil Physics (Agronomy		
(Mch. 7a) - - - - -			5 and 6, - - - - -		4
Timber Physics,			Concrete (Mch. 8b) - - - - -		
(Mch. 7b) - - - - -		4	Forest Roads (Mch. 9a) } - - - - -		1½
Wood Preservatives,			Forestry 5, - - - - -		2
(Mch. 7c) - - - - -			Forestry 6, - - - - -		2
Botany 9, - - - - -		4	Forestry 7, - - - - -		2
Zoölogy 2, - - - - -		4	Forestry 8, - - - - -		4
Analysis of Woods, Gums,			Forestry 9, - - - - -		2
Resins, and Derivatives,			Forestry 1, - - - - -		3
(Agr. Chem. 2a and 3a)		6			
Forestry 5, - - - - -		3			
Geology - - - - -		1½			
		22½			20½

AGRONOMY

JOHN R. FAIN, Professor.

G. A. CRABB, Adjunct Professor.

P. O. VANATTER, Instructor.

L. E. RAST, Instructor.

1. **Cereals.** The cereals studied include wheat, corn, oats, barley, rye and rice; sorghum, millet and buckwheat are studied briefly, in so far as the grains are used for food. The study of these cereals includes the origin, history, composition, cultivation and methods of improvement. In addition to text-book work, the cereals are grown in nursery rows convenient to the College, so that the student may study the plants first hand. The demonstration field is also used for the same purpose. Two hours. Second and third term. **Freshman.**

2. **Cereal Judging.** This is a laboratory course. The study begins with the seed and is followed up by the study of the mature plant and its relation to seed production. A part of this work is in the field and in the demonstration barn, so that the student is taught not only the various facts in regard to the development of the

cereals, but he acquires the habit of studying these plants in the field. The demonstration field and cereals grown in nursery rows form excellent facilities for this work. The germination of corn is given especial attention, and the records in the demonstration field are used in this connection, showing the relationship between the germination and growth of the various varieties tested. One laboratory period. Second and third term. **Freshman.**

3. **Farm Management.** Factors entering into the business of farming and maintaining farm lands are studied in their relation to each other, and to their proper influence on farm practice. Special attention is paid to ways of systematizing the business, and methods of maintaining the crop production of the land. In this connection a detailed study is made of rotation as adapted to Georgia conditions. Laying out the farm, methods of cropping, and records are studied. The cost of production and marketing is given special attention. The laboratory work will consist of conferences in which the results summarized from investigation by the student will be discussed. The student will be required to use "Rural Economics," by Carver, for parallel reading. Other reading assignments will be made from time to time. Two lectures and one laboratory period. First term. **Junior.**

4. **Grasses and Forage Crops.** The different varieties of grasses and forage crops are studied with reference to their yield, composition and feeding value. Special attention is paid to those grasses and forage crops that are adapted to southern conditions. As silage is undoubtedly the cheapest form in which forage crops can be prepared in this state, considerable attention will be given to the crops best adapted for silage, the best method of handling the crop and harvesting it. Three hours. Third term. **Junior.**

5. **Soil Physics.** A study is made of the origin of soils, the different forms of disintegration, and the physical properties of different types, especially in their relation to crop production. Laboratory experiments are required with type soils. Each student may substitute his home soil, or one of that type. This should be an average sample, taken from several places of the most uniform type from his home farm and community. In addition to the text, parallel reading will be assigned. Special laboratory work will be given forest students so that this course will meet their needs. Two lectures and two laboratory periods. First half year. **Junior.**

6. **Soil Fertility.** Factors in crop production and methods of controlling these are studied with especial attention to the influence of culture and fertilization. Methods of handling the soil, so as to permanently increase fertility, rather than for temporary crop production, are emphasized. Special attention will be given to the uses of commercial fertilizers and general soil management. Parallel

reading will be assigned. Forest students taking this course will be given laboratory work that will be adapted to their special needs. Two lectures and two laboratory periods. Half year. **Junior.**

7. **Advanced Work.** Students specializing in Agronomy will be allowed the privilege of either continuing soil work, or farm crops. The data accumulated from the demonstration field will be utilized as much as possible in this course. If the soil work is continued, considerable time will be given to pot tests, with two or three of the principle soil types of the state. Four hours per week. **Senior.**

COTTON INDUSTRY

R. J. H. DeLOACH, Professor.

1. **Laboratory Course in Combing and Mounting.** To meet successfully the demands of the cotton markets, growers must know the essentials of a good variety of cotton, and this course is offered to enable students to comb and mount samples of each variety for comparison. Offered to special students. One lecture and two laboratory periods of one hour each, per week. First term. Required of all men who elect cotton industry.

2. **Cotton Grading.** In this course will be given the essentials of cotton grading together with a study of the "standard grades" of American uplands and Sea Island cotton. Outline lectures on printed sheets will be used as a basis for instruction in this course and students will be marked largely by their work in actual grading. Offered to special students. Three hours per week. Second term. No text-book required. Note books required.

3. **Cotton Industries.** General course in cotton industries including the above courses, together with a course in the marketing and handling of cotton from the commercial standpoint. A study of varieties and variety tests, and selection for improving cotton. Offered to special students who wish to take a short course in the department of cotton industry. Three hours per week during entire year. Bulletins and other publications referred to during course.

4. **The Cotton Industry.** This course consists of studies in the development of the American cotton industry. Consideration will be given to the botanical relations of cotton fiber, the effect of ginning and baling, and final uses of the fiber for manufactured products. General reference will be made to the chemistry of the fiber. Text: M. B. Hammond's Cotton Industry. Many references will be cited. Three periods, first and second terms. Two lectures and one laboratory period. Juniors who elect cotton industry and general Senior course.

5. **Plant Breeding.** A general course in the principles of plant breeding, with special reference to technique in cotton breeding.

The course will consist partly of lectures and partly of field experiments. Text: Bailey's Plant Breeding, supplemented by numerous references. Three hours, third term. Juniors. Seniors, general course.

6. **Experiment Station Work.** Designed to give a review of experiment stations, their history and influence, a study of the agricultural societies in the United States, and their relation to the advance of agriculture. Some consideration will be given to the land grant colleges. Students who take this course will be required to do a considerable amount of seminar work. Three hours, first term. Seniors.

7. **Research.** Advanced courses will be offered in the principles of plant breeding, in which opportunity will be given for the study of the cytology of cotton, and the cytological aspects of cotton breeding. Three periods per week. One lecture and two laboratory periods during entire year. Texts: Punnett's Mendelism and De Vries Plant Breeding, with supplementary reading. Senior students in cotton industry.

This course counts for graduate work when properly supplemented. See announcement of the Graduate School.

For one-Year Students.

A general course made up from courses "1" and "2," cotton industry.

ANIMAL HUSBANDRY

MILTON P. JARNAGIN, Professor.

J. W. HART, Junior Professor.

J. L. BISHOP, Adjunct Professor.

H. B. CARPENTER, Instructor.

1. **Types and Breeds of Farm Animals.** This course will include a brief study of all the domesticated farm animals. Liberal use will be made of the lantern, in order to familiarize the student with the best specimens of all the leading breeds. Practical work will be given in the afternoon in the judging and handling of animals on the College farm. Two one-hour recitations and two two-hour laboratory periods. First term. **Freshman.**

2. **Horses, Mules and Beef Cattle.** In this course the origin, history and development of the various breeds of horses and beef cattle will be studied. The adaptation of the various breeds and types to different conditions of soil, climate and environment; a comparison of draft and light horses will be made, and especial emphasis laid on the adaptation of the different types of horses and mules to the various kinds of work. Two one-hour recitations each week. First term. Sophomore year.

3. **Dairy Cattle.** In this course the origin and utility of the several breeds of dairy and dual-purpose cattle will be studied. Their adaptation for the production of milk, butter, cheese, or for both milk and beef making will be carefully considered. A comparison of the profits to be derived from the various breeds under different conditions of farming will form an important part of the instruction provided. Two 1-hour recitations each week. Second term. Sophomore year.

4. **Sheep and Swine.** This course embraces a study of the history and development of the various breeds of lard and bacon hogs, both of English and American origin. Especial attention will be given in this course to types of hogs suited to grazing. The history of the various breeds of sheep will be taken up, and comparison of the several classes made. Special emphasis will be laid on growing and marketing hothouse lambs and on classifying wool. Two 1-hour recitations. Third term. Sophomore year.

5. **Stock Judging.** The students will receive training in the use of the score card for the various classes of live stock, and will study the standards of excellence as established by the several breed associations. In addition to this they will be given practical work in comparative judging and show-ring placing of the various breeding and market classes of horses, dairy and beef cattle; bacon and lard hogs; fine wool, medium wool, and long wool sheep. Two 2-hour laboratory periods each week. First, second and third term. Sophomore year.

6. **Swine Husbandry.** A specialized study of the underlying principles involved in the swine production will be taken up in this course. It will include class work covering the origin of the breeds of swine, and their adaptation to different sections of the country and market requirements. The principles of breeding, feeding and general herd management of hogs will be studied. The laboratory work will consist of practical work in judging, feeding, dipping and preparing for sale or the show ring. Practical work will be given in building hog houses, paddocks and other necessary equipment, and in planning and laying out yards and pastures for hogs. Two 1-hour recitations and two 2-hour laboratory periods, first term. Junior year.

7. **Principles of Dairying.** This course includes the theoretical and applied side of dairy and creamery practice. A detailed study will be made of the theory of milk secretion, formation and production; separation of cream by the shallow and deep setting systems, and by the use of centrifugal machines. The natural fermentations occurring in milk, their benefit and control; the manufacturing of butter; the testing of milk and its products of butter fat will be considered in their proper order.

8. **Principles of Breeding.** The principles of breeding include a consideration of selection, heredity, atavism, normal variation and fecundity. The methods of breeding studied include in-breeding, line-breeding, cross-breeding, and a review of the methods by which the best types of animal have been developed. Three 1-hour recitations. Senior year.

9. **Animal Nutrition.** In this course a study of the gross anatomy and physiology of the digestive system is included. The theoretical and practical side of compounding balanced rations for maintenance, milk and butter production, fattening and growth are fully explained. Three recitations per week. Senior year.

10. **Advanced Work in Animal Nutrition.** This course is provided for advanced students in Animal Husbandry. The results of feeding tests at the various experiment stations and agricultural colleges in this and other countries will be reviewed. Three 1-hour recitations per week. First term. Senior year.

11. **Feeding Problems.** Qualified students will be allowed to assist in conducting feeding tests, keeping records and summarizing results of experimental feeding conducted by the Department of Animal Husbandry. They will also be expected to make analyses of the various feeding stuffs used and to determine the fertilizing value of the excreta obtained from various classes of farm animals. Three 1-hour recitations per week. Second term.

12. **Economics of Animal Production.** In this course the various types and breeds of live stock will be considered in their relation to the utilization of various farm crops; relation to the productiveness of the soil and the creation of wealth in general. Three 1-hour recitations per week. Third term.

13. **Research Work in Animal Husbandry.** Qualified students will be allowed to carry on investigations in Animal Husbandry under the approval and directions of the professor in charge of the department. Three hours. Senior.

POULTRY HUSBANDRY

L. L. JONES, Instructor in Charge.

Farm Poultry Management. A study of breeds best suited to farm conditions; farm poultry house construction; hatching and rearing chicks; feeding for egg and meat production and sanitary handling and marketing of poultry products. Two 1-hour recitations and two 2-hour laboratory periods. Third term. Juniors.

Poultry Breeding. Advanced study of laws of poultry breeding, comparison of various poultry "systems," and a study of poultry diseases. Practice work given in judging, mating, incubator management, brooding and feeding. Three 2-hour laboratory periods. Third term. Elective for Seniors.

HORTICULTURE

T. H. McHATTON, Professor.

J. W. FIROR, Adjunct Professor.

C. M. KIGER, Tutor.

1. **Elements of Horticulture: Fruit Growing.** A general study of location, site, frost, planting, varieties, orchard tillage and management. Three lectures per week. Required of Freshmen in Fall Term.

2. **Pruning and Propagation.** A course in grafting, budding and other methods of propagation; also a study of the principles of pruning with its practice and effect. A few periods will be devoted to a study of varieties both for the orchard and truck garden. Laboratory course of three periods per week. Required of Freshmen in Winter Term.

3. **Elements of Horticulture: Truck Gardening.** A general study of the main truck crops as to planting, tillage and handling, with the addition of a study of hot-beds and their management. Three laboratory periods per week. Required of Freshmen in Spring term.

4. **Small Fruits.** A study of the various small fruits of interest to the horticulturist. Three lectures a week for six weeks. Book: "Bush-Fruits," by Card. **Fruit Harvesting, Storing and Marketing.** Three lectures a week for six weeks. Book: "Fruit Harvesting, Storing, Marketing," by Waugh. Required of Juniors electing Horticulture in the Fall term.

5. **Pomology and Garden Seeds.** A course in the testing of seeds and a study of the several species of fruit with their pomological classification. Book: "Systematic Pomology," Waugh, to be supplemented by lectures. A laboratory course of three periods per week, to be carried with course "4." Required of Juniors electing Horticulture in the Fall term.

6. **Greenhouse Management and Floriculture.** A study of the various flower crops, forcing crops and management of a greenhouse. Reference books: "Greenhouse Management," Taft; "The Forcing Book," Bailey, and "Practical Floriculture," Peter Henderson. Three lectures per week. Required of Juniors electing Horticulture in the Winter term.

7. **Greenhouse Construction.** A study of the different types of greenhouses and the heating, construction, etc., of the same. In connection with this course, trips to florists and nurseries will be taken to study the plants and greenhouses. A ground plan, end elevation, bill of material and description of heating plant used in a green house will be required of the student at the end of this course. Reference book: "Greenhouse Construction," Taft. A labora-

tory course of three periods per week. Required of Juniors electing Horticulture in the Winter term.

8. **Spraying.** A study of the history, chemistry and time of application of the various spray compounds. Three lectures per week. Required of Juniors electing Horticulture in the Spring term.

9. **Spraying Laboratory.** A course to be given with course "8." Practice in the making and application of different spray mixtures, accompanied by a study of nozzles and machinery. Three laboratory periods per week. Required of Juniors electing Horticulture in the Spring term.

10. **Landscape Gardening.** A study of the various schools of Landscape Architecture and also of the plants used in producing the various effects. A problem in Landscape Gardening will be given to each student, and a drawing showing the solution required. Three lectures and three laboratory periods per week. Required of Seniors electing Horticulture in the Fall term.

11. **Literature of Horticulture.** A course in the general history of Horticulture, with a study of the different reference books and papers. Three lectures per week. Required of Seniors electing Horticulture in the Winter term.

12. **Thesis.** The student is here asked to select some problem in one of the divisions of Horticulture, and will be allowed to find the solution in his own way. Time is given for consulting with the instructor so that his help may be obtained from time to time. At the end of the course a thesis stating the problem, the methods followed, and the results obtained will be required of the student. Three lecture hours and three laboratory periods per week. Required of Seniors electing Horticulture in the Spring term.

13. **Economic Entomology.** A course in practical entomology designed especially for use upon the farm. Special attention will be paid to the identification of insects and a collection will be required of the student at the end of the work. Book: "Manual for the Study of Insects," Comstock. Three hours per week. Required of all Juniors in the College of Agriculture for the last half of the Winter term, and all of the Spring term.

14. **Graduate Courses.** For graduate courses numbers "1," "2" and "3" see announcement of the Graduate School.

FARM MECHANICS

LEROY C. HART, Professor.

W. R. WILSON, Student Instructor.

L. G. PROCTOR, Student Instructor.

E. RAGSDALE, Student Instructor.

Shop Work. *a.* **Wood Work.** This course is designed for the instruction of the student in the use, care and sharpening of all

wood working tools. A carefully planned series of exercises are offered. These exercises bring into use all tools that will be helpful to the student in after life. An advanced course in wood work planned for students having had the preliminary work, will be given. This course will consist of the design and building of furniture and other articles for the home. Required of Freshmen.

b. Forge Work. This work is designed to familiarize the student with the building and care of coal fires, the manufacture of iron and steel, and to familiarize him with the working and handling of iron and steel. Tool-making and tempering will be given. Required of Freshmen.

2. Drawing. Sufficient time will be devoted to free-hand drawing to enable the student to execute readily the necessary drawings in the various laboratory courses. Instrumental drawing will then be taken up so that the student may become familiar with the use of the instruments and be able to execute rapidly and neatly any drawing of this kind that will be required. Freshman year.

a. Forest Drawing. Special drill in drawing topographical maps, using all topographic signs employed in the United States topographic surveys. This course for Forestry students, but may be elected by advanced students.

3. Farm Machinery Judging. A study will be made of the construction and use of the various farm machines, such as are used for preparing, planting, cultivating, harvesting, storing and for home and miscellaneous machinery. Each group will be taken up separately, studied and judged. Required of Freshmen.

a. Dynamite. As dynamite has come to be of considerable importance in agriculture, a short review of its manufacture and use will be given in connection with Farm Mechanics "3."

4. Farm Motors. Considerable time will be given to study and operation of the gasoline engine, the steam engine and the electric motor. This course is taken up in connection with Farm Mechanics "3." Required of Freshmen.

5. Farm Surveying. This work will consist of the study and the use of farm levels, compass and transit for terracing, leveling and the survey of farm lands, and also their use in road building. Each student will be required to make a thorough map of a plot of ground and compute its area. The use of these instruments in tile drainage will be taken up and a survey and map will be made of a plot of ground needing drainage. Required of Freshmen.

a. Forest Surveying. An advanced course is offered in the use of the compass, level, plane table and transit, with special attention to the different uses of these instruments in topographic and reconnaissance work. The work will consist of a hasty survey of a plot of ground. Then a more careful survey will be made as a check

upon the first to illustrate the difference in accuracy. This will enable the student to determine the method to be used on all future work. Work required in the Sophomore year for all Forest students, but may be elected by other students who have had Farm Mechanics "5," or its equivalent.

b. Saw Mill Construction. In view of the scarcity of proper heavy timber for construction, a course will be given dealing with heavy framing. This course will deal with the framing of saw mill buildings and other structures using heavy timbers. Forest students. Sophomore year.

6. Fencing. This will include a study of the strength and adaptability of various materials for fence construction. The principles of gate construction, such as bracing at the corners and at sufficient points according to the condition of the ground. Junior year.

7. Farm Building. This course consists of the study and design of farm buildings, starting with the simplest and gradually working up to the most complicated. Plans are drawn and from these, the bill of material and an estimate of the cost of the completed structure are made. Special attention will be given to farm convenience and sanitation. Considerable time will be spent in studying problems of lighting, heating, water supply and sewerage disposal for the farm home. Farm Mechanics "2," or its equivalent, are prerequisite to this course. Junior year. Second term.

a. Saw Mill Machinery. This course consists of a study of saw mill machinery of both portable and stationary mills, with all necessary machinery for the complete handling of the lumber from the log to the dry kiln; donkey engines, skidders, logging locomotives and logging cars. Required of Forest students, Junior year.

b. Wood Physics. A study of the strength of wood under different conditions and shapes, also the physical effect of moisture, heat and preservatives upon its strength will be taken up. Required of forest students, Junior year.

c. Wood Preservatives. The structural and physical properties of wood in relation to durability; the primary cause of decay; factors governing the lasting powers of different species; the preservation of woods by the application of paints and oils to the surface; the impregnation with creosote and other wood preservatives; the commercial method of impregnation; description of preserving plants and the fire proofing of timber. Required of Forest students, Junior year.

8. Concrete Construction. A study will be made of the principles of concrete construction, also the material, forms, mixing and placing and tamping. Their application to farm conditions and the various uses to which concrete has been put in late years will be pointed out. Special attention will be given to its use for residences

and barns. The construction of fence posts from concrete will be taken up. Optional for Seniors. Farm Mechanics "2," "6" and "7" prerequisite, or their equivalent.

a. Concrete Testing. An advanced course in the testing of cements and concretes under different conditions and shapes will be given. Optional for Seniors.

b. Concrete Engineering. A course designed to show the applications of concrete to forest engineering. The method of using natural aggregates will be studied. Forest students, Senior year.

9. Road Building. A study will be made of the various types of machinery used in road construction. Practice work will be given in locating roads at the most desirable grades with special attention to drainage. Considerable time will be devoted to road material, and in making tests of the various kinds. Optional for Seniors. Farm Mechanics "5," prerequisite to this course.

a. Forest Roads. This consists of a special study of earth roads and tramways in connection with their use in lumbering. Required of Forest students, Senior year.

Note.—Number "8" and number "9" will constitute half a year's work.

VETERINARY SCIENCE

W. M. BURSON, Professor.

H. H. ROTHE, Instructor.

1. Consists of lectures and demonstrations covering the anatomy and physiology of the animals of the farm. Special attention is given to the anatomy of the horse and cow with variations occurring in other farm animals. Histology is taught by lectures and by examination of animal tissues under the microscope. Materia Medica is taught by lectures, examination of specimens of crude and prepared drugs and medicines. First, second and third terms. Two hours per week. Sophomore year.

2. Consists of laboratory work in the above subjects. First, second and third terms. One laboratory period per week. Sophomore year.

3. Consists of lectures on Pathology, Bacteriology, Parasitology, Theory and Practice, and Lameness. First, second and third terms. Two hours per week. Junior year. Courses "1" and "2" are prerequisites.

4. Consists of laboratory courses in Pathology and Bacteriology. First and second terms. One laboratory period per week. Junior year.

5. Consists of lectures in Theory and Practice, Therapeutics, Surgery, Dentistry, Obstetrics and Contagious Diseases. First,

second and third terms. Senior year. Two hours per week. Courses "1," "2," "3" and "4" prerequisite.

6. Consists of free clinics held during the school year at the Veterinary Hospital. Third term. Junior year. First, second and third terms. Senior year.

7. **Bacteriology.** This course is designed to give the student in agriculture general information concerning various important forms of germ life. Lectures and laboratory work constitute the course. The various classes of bacteria are studied, special attention being paid to soil bacteria, saprophytes and those concerned in plant and animal diseases. Laboratory work consists of study of cultures and specimens under the microscope.

Two lectures and one laboratory period per week, first half year. Required of Juniors. Text: "General Bacteriology," Jordan. Dr. Rothe.

AGRICULTURAL CHEMISTRY

W. A. WORSHAM, Jr., Professor.

L. M. CARTER, Junior Professor of Soil Chemistry.

D. B. LONG, Professor in Charge Soil Chemistry.

R. S. HOLLINGSHEAD, Adjunct Professor.

1. **Organic Chemistry.** This course consists of the study of the classification and relation of the carbon compounds, and the preparation of the simpler and more important ones.

Stress will be laid on those compounds relating most directly to agriculture, such as the organic compounds in the soil, feeds, fertilizers and organic food adulterants.

Students taking this course must have had elementary Chemistry "1," or Inorganic Chemistry "2," including work in laboratory. Haskins & Macleod Organic Chemistry will be used as a basis of this work. Three hours of lectures and recitations and one laboratory period during first and second terms of Sophomore year.

2. **Qualitative Analysis.** In this course a study will be made of the characteristic properties and the reactions of the common metals and the acid radicals, and the general principles underlying qualitative analysis. By systematic work with known substances and then "unknowns" the student will be able to familiarize himself with the processes employed in qualitative analysis. This course is designed to enable the student to know the composition of all ordinary substances, particularly those that are of most importance in agriculture. Text: Dennis and Whittelsy "Qualitative Chemical Analysis;" special problems outlined by the instructor.

Two hours of lectures and recitations, and two laboratory periods

during third term of Sophomore year, and three hours of lectures and recitations and six laboratory periods during first term of Junior year.

2a. Qualitative Analysis. Course adapted to needs of students in Forestry.

2b. Same as Course "2," except students not specializing in Chemistry take two hours of lectures and recitations and two laboratory periods during first term of Junior year. Required of students taking General Agriculture, Agronomy and Animal Husbandry.

3. Quantitative Analysis. The object of this course is to prepare the student for special work in agricultural chemistry as well as to teach the method of quantitative analysis.

The methods of both gravimetric and volumetric analysis will be treated in lectures and the practice carried out in the laboratory. Substances of known percentage composition will first be analyzed and then substances of unknown composition, including the simpler agricultural products. Texts: "Elementary Quantitative Agricultural Chemistry Analysis," Lincoln and Walton. Reference books: Quantitative Analysis, by Treadwell, Olsen and Fresenius.

3a. Quantitative Analysis. Course adapted to needs of students in Forestry. Gums and resins will be given special attention.

3b. Same as Course "3," except that students not specializing in Chemistry, have two hours of lectures and recitations and two laboratory periods. Required of students taking General Agriculture, Agronomy and Animal Husbandry.

4. Advanced Quantitative Analysis. The basis of the work in this course will be the study of the methods employed in soil investigations, the analysis of soils, fertilizers, feeds, waters, etc. Some latitude will be allowed the student as to the substances to be analyzed. Students taking this course must have had Agricultural Chemistry "3." No text-books required. Work for laboratory will be outlined and standard references given.

Three hours of lectures and recitations and six laboratory periods for three terms during Senior year.

4b. Same as Course "4," except that students not specializing in Chemistry have two hours of lectures and recitations and two laboratory periods. Required of students taking General Agriculture, Agronomy and Animal Husbandry.

Fees. No laboratory fees are charged for any of the courses offered in this department.

A deposit of \$5.00 will be required for each laboratory course to cover breakage of apparatus. If any of this amount is left it will be returned to the student at the end of the year.

FORESTRY

ALFRED AKERMAN, Professor.

BONNELL H. STONE, Student Assistant.

Work of the School of Forestry.

The school was created in 1905; and work was begun with the academic year 1906-1907. Several lines of work have been undertaken: (1) Instruction in Forest Economics, to bring out the importance of our forests to the state and to the nation. (2) Elementary instruction in forestry, to familiarize the agricultural students with the management of farm woodlots and the execution of forest working plans. (3) Instruction in professional forestry, for those who intend to go into the lumber business, or to follow forest engineering as a profession. (4) Popular education in forestry throughout the state. (5) Coöperation with the owners of woodlands.

The work along the first line is embodied in course "1"; along the second line courses "2" and "3"; along the third line in courses "4," "5," "6," "7," "8" and "9"; along the fourth line in publications and in lectures before schools, farmers' institutes, lumbermen's associations, and other interested organizations; along the fifth line in the coöperative agreement which the College of Agriculture makes with woodland owners.

Description of Courses.

1. **Forest Policy.** A study of the public's interest in forests. The development of the forest policies of Germany, France, Switzerland, Great Britain, the United States and the several states. Instruction by lecture. Three hours. **Required of Seniors in Forestry.**

2. **Farm Forestry.** A study of forestry as applied to farm woodlands. The course is designed to give a working knowledge of how to secure a stand of timber, how to thin, protect and harvest the forest crop. Text: Akerman's "Farm Forestry." Two 1-hour recitations and one 2-hour practice period, third term. **Required of those taking the one-year course in Agriculture.**

3. **Farm Forestry, Longer Course.** Similar to course "2," but adapted to more advanced students. Two 1-hour lectures and one 2-hour practice period, second half year. **Optional with Seniors in Agriculture.**

4. **Dendrology.** This course comprises a botanic and economic study of forest trees. Identification of species in the woods in summer and winter habit is given special attention. Instruction is given by lectures, laboratory work and excursions. Reference work: Sargent's "Manual of the Trees of North America." Three hours, Sophomore year. **Required of Sophomores in Forestry.**

5. **Silviculture.** A study of forest stands from their founding to maturity, including artificial and natural reproduction, tending the stand, and silvical notes on the important species. Instruction by lecture, excursion and practice. Three hours, Junior year; six hours first term of Senior year. **Required of Juniors and Seniors in Forestry.**

6. **Forest Protection.** A study of the injury to the forest from trespass, fire, storms, insects, fungi and grazing, and of protective measures. Instruction by lecture, excursion and practice. Six hours, third term. **Required of Seniors in Forestry.**

7. **Forest Mensuration.** Computation of contents of logs, standing trees and forest stands; studies in diameter, height and volume increment; the use of instruments of mensuration; ocular estimation of timber; log scales and their use. Instruction by text, supplemented by lectures and practice in the woods. Text: Graves' "Forest Mensuration," and Cary's "Manual." Six hours first term, Senior year. **Required of Seniors in Forestry.**

8. **Forest Management.** Forest valuation, financial returns from forest property; principles of forest working plans; construction of a forest working plan for a given tract. Instruction by lecture, with practice in the woods. Senior year, six hours second and third terms. **Required of Seniors in Forestry.**

9. **Lumbering and Utilization.** A study of the lumber industry and the uses of wood; the methods employed by lumbermen, and their improvement; felling, transportation and manufacture. An essay on some branch of the lumber industry is required. Instruction by lectures, supplemented by reading and investigation. Six hours, second term, Senior year. **Required of Seniors in Forestry.**

Summer Terms.

Candidates for degree are required to live for two months each summer between the Sophomore and Junior, and Junior and Senior years at a lumber camp, saw mill, or turpentine distillery, to keep a diary of each day's work, to make a herbarium of the forest flora of the locality and prepare a thesis on the operations being carried on. It is preferred that students secure some employment connected with the operations.

Coöperation with Lumbermen.

The College furnishes an expert to examine woodlands and prepare suggestions as to their management. Those who desire advice in the management of woodlands or in planting waste lands should make application on blanks which are sent on request.

MATHEMATICS.

C. M. SNELLING, Professor.

R. P. STEPHENS, Associate Professor.

R. S. POND, Adjunct Professor.

D. R. CUMMING, Tutor.

1. **Trigonometry.** A course in Plane and Spherical Trigonometry. Three hours per week for the first two terms. Texts: Murray's. Professors Snelling, Stephens and Pond, and Mr. Cumming.

2. **Graphical Algebra.** This will include a study of coördinates, the plotting of curves, and the derivation of the equations of the straight line and the circle. Three hours per week for the third term. Professors Snelling, Stephens, and Pond, and Mr. Cumming.

3. **Analysis.** The work of Course 2 will be continued by the study of the equations of the conics and by an introduction to the Calculus. Three hours per week for the first half year. Text: Smith and Granville's. Professors Stephens, and Pond, and Mr. Cumming.

[Note: In 1912-13, Courses 2, 3 were combined into one course and given as Course 3a.]

4. **Advanced Algebra.** The following topics will be treated: mathematical induction, binomial theorem, complex numbers, determinants, theory of equations, partial fractions, series, and logarithms. Three hours per week for the second half year. Professors Stephens and Pond and Mr. Cumming.

CIVIL ENGINEERING.

C. M. STRAHAN, Professor.

E. L. GRIGGS, Associate Professor.

J. C. KOCH, Adjunct Professor.

(Student Assistants: R. T. Goodwyn and C. Pope).

Civil Engineering Courses.

A-1. **Elementary Surveying.** A course covering the use, care, and adjustment of surveying instruments, methods of surveying by chain alone, by compass, and by transit; the methods of platting and computing areas and volumes; the variation of the magnetic needle; problems in parting off and dividing lands; the use of the Y level and precise leveling; plane table and stadia surveying, and the use of the solar transit. Three hours per week. Text: Breed and Hosmer's Surveying. Professor Griggs.

B-1. **Materials of Construction.** A course of lectures and laboratory work covering the occurrence, preparation, and manufacture of the important structural materials, to-wit: lumber, its seasoning, inspection and preservative treatment; stone, natural and artificial, including brick, terra cotta, cements, concrete blocks, etc.; the metals, including cast iron, wrought iron, steel, copper, tin, lead,

zinc, aluminum and alloys as used by engineers; uniting materials, covering limes, mortars, cements, bituminous binders, joinery, riveting, etc. First and second terms. The third term is given to Foundations and Masonry structures, the course being based on Baker's Masonry Construction. Three hours per week. **Professor Strahan.**

B-2. Railroad Engineering. A course covering reconnoissance, preliminary and location surveys, curves, spirals, switches, etc., cross-sectioning, computations and estimates, railroad economics and the various other problems involved in the complete engineering of railways. Three hours per week. Text: Webb's Railroad Construction. Lectures. **Professor Strahan.**

B-3. Highway Engineering. A course of lectures, laboratory and field problems covering the surveys, location, drainage, grading and surfacing of public highways and city streets. The preparation of maps, profiles and estimates. Paving methods and specifications. Road finances, equipment and labor. Three hours per week. **Professor Koch.**

PHYSICS.

L. L. HENDREN, Professor.

E. T. MILLER, Instructor.

GRADY PADGETT, Fellow.

The following courses are offered for Agricultural students. For other courses see the A. and M. College announcements.

1. Elementary Physics. In this course especial emphasis is laid on the application of the principles of Physics to practical life. Text-book: Mann and Twiss, Physics; with special laboratory notes. Two hours per week recitation work and three hours per week laboratory work. Required of all Sophomore B. S. Agricultural students and Freshman B. S. Forestry students who have not offered one unit of Physics for entrance.

2. Elementary Physics. A course in general Physics similar to but somewhat more advanced than Physics "1," and requiring as a prerequisite one unit of Physics work in the high school. Three hours per week recitation and two hours per week laboratory work. Required of all Sophomore B. S. Agricultural and Freshman B. S. Forestry students who have received credit for one unit entrance work in Physics.

3. Physical Measurements. This course is Offered as an extra course for students taking Physics "1" or "2" who desire to do more individual laboratory work than is required in the regular course. Two hours per week in the laboratory.

CHEMISTRY.

H. C. WHITE, Professor.

H. V. BLACK, Associate Professor.

C. A. WELLS, Instructor.

The following courses are offered:

1. **Elementary Chemistry.** Three hours per week of lectures and recitations and two laboratory periods, for three terms. Text: Kahlenberg, "Outlines of Chemistry."

2. **Inorganic Chemistry; College Course.** Three hours per week of lectures and recitations and two laboratory periods, for three terms. Text: Kahlenberg, "Outlines of Chemistry."

BIOLOGY.

JOHN P. CAMPBELL, Professor.

PAUL L. HUDSON, Fellow.

In this school, the following courses are offered for the coming year:

3. **Invertebrate Zoölogy.** This course is based upon the laboratory study of a series of selected types representing all of the leading invertebrate phyla of the animal kingdom. Arthropods are studied in the first term; Protozoa, Porifera, Coelenterates and some of the smaller phyla in the second; while Annulata, Echinoderms and Mollusca take up the third. This course is intended to give students a broad outlook on the animal kingdom as a whole, and to this end many theoretical questions are taken up in connection with those animals which best serve to illustrate them. Three hours weekly with laboratory work additional.

4. **Vertebrate Zoölogy.** The methods in this course are the same as in course "3," The different classes of Vertebrates are studied by means of selected types, but this is supplemented by extended reading, museum work, and lectures profusely illustrated with lantern slides. Three hours weekly with additional laboratory work during first and second terms.

5. **Comparative Osteology.** The comparative structure of the skeletons in the different vertebrate classes is taken up in this course. Special stress is laid upon the broader features of theoretical importance, but sufficient detail will be brought out to make this course valuable to any one who may have occasion to make actual use of its subject matter.

6. **Comparative Anatomy of Vertebrates.** In this course, attention is paid to the broader side of Anatomy, including Embryology and Histology. All the organs in the body are studied comparatively and attention is given to the theoretical questions growing out of this line of study. Based on Kingsley's "Comparative Anatomy of Vertebrates." Three hours weekly with extra laboratory work.

SCHOOL OF BOTANY.

J. M. READE, Professor.

PAUL TABOR, Student Assistant.

Course A. Plant Life. This is a brief course arranged for one-year students, and open to them only. It is designed at once to awaken observation and to furnish the vocabulary made use of in applied fields of study.

Course 1. Elementary Botany. This is the first of the regular courses open to matriculates. It is introductory in character dealing with a range of topics but not omitting what is fundamental in the structure and biological relations of familiar plants. Prerequisite to all other work in the school. Two lectures and two laboratory periods a week through the year.

Other courses, based on "1" and dealing with structure, development, physiology, ecology or with special groups such as the bacteria or fungi or with special topics such as those of plant disease and genetics, are described in the University announcement.

RHETORIC AND ENGLISH LITERATURE.

R. E. PARK, Professor.

S. V. SANFORD, Junior Professor.

S. M. SALYER, Instructor.

1. **Composition and Rhetoric.** Detailed study and practice in construction and kind of composition. This course will involve continual practice in writing and some work in rhetorical analysis. Lectures, themes, daily exercises. **Required of Freshmen.** Three hours a week. Professor Sanford and Mr. Salyer.

2. **English and American Literature.** The principles of literary criticism and the practical applications of these principles to masterpieces of authors studied with reference to (1) elements of literature, (2) species of literature, (3) historical development. The object of this course will be to give to the student a general view of the history and development of literature, with more detailed knowledge of certain periods. Throughout the course much attention will be devoted to the writing of essays as a means of training the student to appreciate and to express his appreciation of the literature studied. **Required of Sophomores.** Three hours a week. Professor Park and Mr. Salyer.

ROMANCE LANGUAGES.

J. LUSTRAT, Professor.

W. T. TURK, Instructor.

French.

1. **French 1** is a course for beginners who are conditioned in French and wish to substitute both French and German for Greek.

The course consists of careful drill in pronunciation, the rudiments of grammar, the study of regular and irregular verbs, the inflection and use of personal pronouns, the rudiments of syntax, dictation, easy exercises of translation from English into French, conversation and the reading of about 275 duodecimo pages of easy prose. Three hours per week.

2. **French 2** is the continuation of course "1," for students who are conditioned in French and wish to substitute both French and German for Greek. It will comprise the reading of about 400 pages of easy modern prose, constant practice in translation into French easy English prose, dictation, short drill in grammar and syntax, full study of all irregular verbs and conversation. Three hours per week.

HISTORY AND POLITICAL SCIENCE.

J. H. T. McPHERSON, Professor.

W. O. PAYNE, Associate Professor.

R. P. BROOKS, Associate Professor.

1. **Greek and Roman History**, with a brief review of the early oriental nations and continued through the period of mediaeval history ending with the Treaty of Verdun. **Optional for Freshmen** who do not offer Ancient History for entrance. Three hours per week throughout the year. Text: Myers's "Ancient History." **Associate Professor Payne.**

2. **European History.** In this course one or more characteristic periods of European history are studied intensively. The periods considered and texts used are changed from year to year. During the present session the eighteenth and nineteenth centuries were studied, with Robinson and Beard's "The Development of Modern Europe," volumes I and II, as text. **Required of Freshmen**, except (1) those admitted to History "1," and (2) Freshmen in the B. S. Agriculture course. Three hours weekly throughout the year. Four sections. **Professor McPherson, Associate Professors Payne and Brooks.**

3. **History of Georgia.** An introductory lecture course of one hour per week throughout the year, covering the more important aspects of the history of the State from colonial times to the present. Collateral reading and map work required. **Required of Freshmen.** **Associate Professor Brooks.**

4. **Political and Constitutional History of England.** Especial attention is paid to the development of Parliament, the Cabinet and the phases of local government—township, parish, manor, hundred, and county—with the object of laying a thorough foundation for the subsequent study of American institutions. The progress of

contemporary European events is kept constantly in view. Three hours per week throughout the year. Text: Gardiner's "History of England." Four sections. Associate Professors Payne and Brooks.

German.

1. **German 1** is a course for beginners who are conditioned in German and wish to substitute both German and French for Greek in the A. B. degree. For 1912-13 this course comprised an oral introduction of four months, following which, grammar and reader, with daily oral and written exercises, completed the year's work. Three hours per week. Professor Morris and Adjunct Professor DuBose.

2. **German 2** continues the work of German "1," and completes the requirement for entrance given on page "23." The course consists of translation of simple texts and exercises in both speaking and writing German. Three hours per week. Professor Morris and Adjunct Professor DuBose.

SCHOOL OF EDUCATION.

T. J. WOOFER, Dean.

L. R. GEISLER, Professor Psychology.

The following courses are offered in the College of Agriculture as general electives:

Psychology.

1. **Elementary Psychology.** An introductory course covering the essentials of general psychology. Three hours a week first half year. Dr. L. R. Geissler.

2. **Educational Psychology.** A study of mental development through the different stages of growth, the infant, the child, and the adolescent, and of instinct, perception, memory, imagination, thought processes, emotions, will, character, etc. Three hours a week, second half year. Dr. L. R. Geissler.

5. **Principles of Psychology.** A course taking up in lectures, recitations and experiments the various mental activities. The structural, functional and general aspects of mind will be considered and the relations of dreams, hypnosis, neurosis, criminal action, animal behavior, etc., to the normal mind will be discussed. This may be taken as a beginning course but not at the same time as Course "1." Three hours a week throughout the year with laboratory work additional. Dr. L. R. Geissler.

6. **Experimental Psychology.** This will be an advanced course of laboratory experiments. Laboratory work and conferences the equivalent of three hours a week credit for the year. Prerequisite, Course "5" or Course "1." Dr. L. R. Geissler.

Philosophy.

3. **Logic.** A study of both deductive and inductive logic; practice in the use of the syllogism, inductive methods, and criticism of fallacies. Three hours a week first half year. **Professor Woofter or Professor ———.**

4. **Ethics.** This will be a study of human conduct through its biological, psychological and sociological bases. The moral aspects of present-day problems of society, democracy and human life generally will be considered. Three hours a week second half year. **Professor Woofter or Professor ———.**

8. **History of Philosophy.** A course tracing the movements of thought from the early Greek period to the present time and giving an introduction to the great thinkers of the world. Some special study in the modern field. Three hours a week throughout the year. This should be taken as a Senior elective. **Professor ———.**

Education.

1. History and Principles of Education.

(a) A study of the educational ideals and achievements of the great peoples of the world, tracing the development of modern educational ideals, principles and systems. Three hours a week first half year. **Professor Woofter.**

(b) A fuller study of special topics and educational classics bearing on modern principles and practices. Three hours a week second half year. **Professor Woofter.**

2. **Educational Psychology.** A study of mental development with especial attention to the adolescent period; also of such fields as instinct, memory, imagination, thought processes, emotions, will and character. Three hours a week second half year.

This course may be taken after Psychology "1" or "5." If Psychology "5" is taken, then this course may be taken with first half of Education "1" to make a full year's work. **Dr. L. R. Geissler.**

4. **Secondary Education.** The American High School, its development, organization, course of study, methods of teaching, and administration. A comparison with secondary schools in leading foreign countries. Three hours a week throughout the year. **Professor Stewart.**

5. Educational Sociology.

(a) **Elementary Sociology.** An introduction to the study of society and modern social problems. Social function of education.

Note. See Peabody School of Education for fuller outlines and other courses. All courses given in this School are open to students in the College of Agriculture.

(b) **Rural Sociology.** A study of rural conditions and a constructive program of betterment. Three hours a week first half year. Professor _____.

6. **Vocational Education.** Its development in various countries and its function in a democracy, with especial attention to **Agricultural Education.** Three hours a week second half year. Professor _____.

It is suggested that students preparing to teach should elect Psychology "1" and "2" and at least two courses from Education "11," "4" and "5" and "6."

GEOLOGY.

Vacant.*

1. **General Geology.** Three hours per week, second half-year. The course of instruction is at first a general one, embracing the study of the distinguishing properties of minerals and common rocks, the decay of rocks and the formation of soils. Following this is a more extended course of Structural, Dynamical and Historical Geography.

*Temporarily in charge of the professor of Chemistry.

MILITARY SCIENCE AND TACTICS.

W. R. KENDRICK,

17th U. S. Infantry, Commandant of Cadets.

In accordance with the provisions of the Land Grant Act, military exercises are regularly held in this College, upon which the attendance is compulsory for members of the Freshman, Sophomore and Junior classes, and the students in the One-year Course in Agriculture, except when excused by the surgeon of the Corps of Cadets.

The uniform consists of a coat of standard Charlottesville gray cloth; winter trousers of same material, with stripe one inch wide; and blue cap. The uniform costs about \$15.55. For spring use white duck trousers, jeans trousers and blue shirt, leggins and hat are required, costing about \$4.50.

Practical instruction is given three hours each week, covering the following subjects: Infantry Drill Regulations; Field Service Regulations; Manual of Guard Duty; Firing Regulations for Small Arms; Artillery Drill Regulations, partial.

Theoretical instruction, two hours each week, for commissioned and non-commissioned officers, is given in the portions of the above subjects covered by the practical instruction, and is supplemented by lectures. One hour each week of theoretical instruction is required of Freshmen.

ONE YEAR COURSE

This course commences at the opening of the fall session and continues throughout the collegiate year. The purpose of this course is to provide suitable instruction for those who can only remain in college for one year. An effort has been made, therefore, to condense the work as much as possible, provide a correct scientific foundation and yet make the instruction of a very practical nature. An outline of the one-year course follows. The schedule indicates the number of hours required in each subject and the amount of time devoted to class-room and laboratory work. Notice that the laboratory instruction has been emphasized as this is considered the best way of demonstrating the value of applied science to the solution of the problems of the farmer. Students entering this course who are capable of carrying the Freshman Mathematics or English may be permitted to do so upon the approval of the President of the College.

ONE-YEAR COURSE.

First Term.		Lab.
	Hours.	Periods.
English -----	3	--
Arithmetic -----	3	--
Cereals -----	2	--
Cereal Judging -----	--	1
Soils -----	3	--
Iron and Wood Work -----	--	3
Horticulture -----	3	1
Breeds and Breeding -----	3	2
Botany -----	3	--
Veterinary Medicine -----	3	--
	—	—
	23	7
Second Term.		
English -----	3	--
Arithmetic -----	3	--
Cotton and Cotton By-Products -----	3	1
Cotton Grading (Cotton School) -----	--	--
Soil Fertility -----	3	--
Farm Machinery -----	--	1
Horticulture -----	3	1
Dairying -----	1	2
Feeds and Feeding -----	3	1
Farm Management -----	2	--
Veterinary Medicine -----	2	1
	—	—
	23	7

Third Term.

English -----	3	--
Farm Accounts -----	3	--
Grass and Forage crops -----	3	1
Chemistry -----	3	--
Plumbing and Pipe Fitting -----	--	1
Horticulture -----	3	1
Farm Buildings -----	--	1
Practice Work Animal Husbandry -----	--	1
Surveying -----	3	1
Forestry -----	2	1
Veterinary Medicine -----	2	--
	—	—
	22	7

AGRONOMY. (1-year course).

Cereals and Cereal Judging. The history, use and cultivation of the different cereals will be studied. Especial attention will be given to seed selection as influencing the yield of farm crops. A study of the various cereals, especially corn, will be made by use of the score card. First term. Three 1-hour recitations and one laboratory period.

Farm Management. An examination of the various business methods employed on different classes of farms is first undertaken. Special attention is given to systematizing the work and determining the effect of various rotations on the maintenance of fertility. A stereopticon is used to show how various kinds of farms should be arranged so as to conduct the business with the greatest economy.

Grass and Forage Crops. A study is made of the various grasses adapted to this state that can be utilized to the best advantage for pasturage and hay. The uses of the forage crops, especially the legumes, are given considerable attention. Methods of growing and preserving silage are considered at length, as this is undoubtedly the best form for preserving forage crops in the South.

Soils. A study of the physical properties of soil is made, and the effect of good and poor mechanical conditions on crop production is demonstrated. Methods of improving the physical conditions are studied. Special attention is given to the water-holding capacity of the soil, and the best methods of conserving soil moisture. First half year. Three 1-hour recitations.

Soil Fertility. The different fertilizing ingredients and their function in plant growth will be discussed. Methods of mixing fertilizers and determining the formulas best adapted to different soils will be studied. The effect of rotation of crops on soil fertility and the

draft of the different crops on the soils will also receive attention. Second half-year. Three 1-hour recitations.

COTTON INDUSTRY. (1-year course).

Emphasis is laid on the importance of seed selection. A study of types of plants with special reference to their yielding capacity will be made, and the conditions affecting length, strength, uniformity, quality and quantity of fiber. Some attention will be given to combing and grading cotton, and all varieties will be studied in the seed in the laboratory. There will also be a complete set of grades of long staple and upland lint cotton in the laboratory for inspection and comparison, and students will be required to grade some cotton by the samples, after the basis of grading has been pointed out to them. Second term. Three 1-hour recitations.

ANIMAL HUSBANDRY. (1-year course).

Breeds and Breeding. A practical course will be given in the study of domesticated animals, and a consideration of the fundamental laws underlying their production. Three 1-hour recitations.

Dairying. In this course lectures will be given on the principles of modern dairying and on the manufacture of butter, cheese and other products. Practice work in the operation and repair of dairy machines will be required of all students. The use of the Babcock test and other apparatus for the detection of adulteration of milk will be fully explained. One lecture and two laboratory periods. Second term.

Feeds and Feeding. In this course a study of the various feeding stuffs will be taken up. The balancing of rations and their adaptation for maintenance, development of bone and muscle, production of milk and butter, and for maintaining and fattening farm animals will be discussed and explained. Three 1-hour recitations and one laboratory period. Third term.

Stock Judging. Scoring, judging and classifying the various classes of farm live stock will form an important part of this course. After the student has become proficient in the use of the score card, work will be given in comparative judging and show-ring placing. The standard of excellence as established by the several breeders' associations will also be given some attention. First term. Two laboratory periods.

HORTICULTURE. (1-year course).

Orchards. A study of orchards as to location, site, exposure, cultivation, fertilization, planting, pruning, spraying, thinning, harvesting and marketing. Book to be used, "Principles of Fruit Growing," by L. H. Bailey. Three 1-hour lectures and one laboratory period per week. First term.

Propagation and Pruning. A study of budding, grafting, and other methods of plant manipulation and propagation, with a course in the principles and practice of pruning. Three lectures and one laboratory period per week. Second term.

Small Fruit and Trucking. A course in the management of small fruit plantations and truck gardens, following much the same order as the orchard course. Particular attention will be given to the construction and management of hot beds as well as to the principal small fruit and vegetable crops of the section. Three lectures and one laboratory period per week. Third term.

FARM MECHANICS. (1-year course).

Wood Work. This will include the care and use of wood working tools. It will be made as practical as possible. The majority of the exercises will consist of the construction of articles that will be needed on the farm, such as gates, fences, wagon beds and other farm conveniences. First terms. Two laboratory periods. Alternates with forge work.

Forge Work. This course will include welding and shaping of iron and handling of steel. Considerable attention will be paid to the making and tempering of small hand tools. A student after taking this course, will be able to do all of the ordinary repairs of farm machines and other blacksmithing that will be necessary in farm work. First term. Two laboratory periods per week. Alternates with wood work.

Farm Machinery Judging. A study of the principles of construction and operation will be made. Considerable time will be given to studying the individual parts of the different farm machines. Considerable time will be devoted to motors, especially gasoline and steam engines. Third term. Two laboratory periods.

Farm Buildings and Fences. The strength and adaptability of the materials available for construction will first be determined. Principles of construction will be studied, and considerable time will be given to planning the different farm buildings with especial regard to convenience and sanitation. The use of concrete on the farm and principles of concrete construction will be demonstrated. Laboratory practice will constitute an important part of the work. One lecture and two laboratory periods per week.

Farm Engineering. Instruction will be given in the use of the instruments necessary in surveying farm lands and terracing. Considerable time will be given to the location of farm buildings, roads, terracing, leveling and tile drainage. One lecture and one laboratory period per week.

Plumbing and Pipe Fitting. A short course in plumbing and pipe fitting will be given in connection with farm buildings. It will consist of the location and planning of the water supply and drainage away from the home, and the proper laying out of a perfectly sanitary system of plumbing for all buildings. The proper assembling and selection of the material needed for a complete job, and the calking of all joints, etc., will be fully studied.

VETERINARY SCIENCE. (1-year course).

1. Consists of lectures in the anatomy and physiology of the horse, with brief notices of the variation occurring in the other farm animals. Lectures on *Materia Medica* cover the more commonly used drugs and medicines, paying particular attention to the action and dosage of the drugs. First term. Three hours per week.

2. Consists of lectures on Theory and Practice and Surgery; deals with the most common diseases of the horse and cow and the minor operations that are performed on these animals and the care of surgical and accidental wounds. Second term. Two hours per week.

3. Consists of free clinics held at the Veterinary Hospital. One hour per week. Second and third terms.

4. Consists of lectures on Obstetrics and Dentistry. Two hours per week. Third term.

AGRICULTURAL CHEMISTRY. (1-year course).

This course is planned to prepare the student for intelligent study of the chemistry of soils, fertilizer and foods. At first the elements and compounds most important to agriculture will be taken up. The composition of farm crops, and the application of chemistry to plant and animal life will be studied. Text: "Chemistry of the Farm," by Warrington. This course consists of three lectures during third term.

FORESTRY. (1-year course).

A study of forestry as applied to farm woodlands. How to secure a stand of timber, how to thin, to protect, and harvest the forest crop. Second half-year. Two 1-hour lectures and one 1-hour practice period.

THREE-MONTHS OR WINTER COURSE IN AGRICULTURE.

Short courses of instruction in agriculture and related subjects are offered for the benefit of those who are engaged or expect to engage in farming, and yet who are so situated that they cannot undertake a full college course of study. This course is given dur-

ing the winter when work is least pressing and the time can best be spared. The course consists principally of the regular work provided during the winter term of the one-year course, with such additional elective subjects as the student finds he can conveniently carry upon consultation with the President of the College.

Those desiring to take this course can familiarize themselves with the nature and character of the work by referring to the schedule of the one-year course for the second term. Considerable extra work may be taken if desired. Certain subjects may also be dropped and others elected to meet the wishes of the student. Requirements for admission to this course and the cost have already been mentioned and need not be again detailed here. Those intending to take this course of instruction are urged to write to the College authorities some time in advance so that suitable arrangements can be made for them.

SHORT COURSES FOR FARMERS

In Cotton Industries, Cereal Production, Live Stock Farming and Horticulture. The popularity of the Cotton School conducted annually by the College of Agriculture and the desire for instruction on a wider range of subjects pertaining to an advanced agricultural practice made the readjustment of the work of the Cotton School advisable. While this course is retained and its character improved in many particulars, other courses have been added designed to meet the needs of Georgia farmers who desire to specialize in cereal production, animal industries and horticulture. Those attending the short courses for farmers next winter will therefore have an opportunity of specializing along four distinct lines, which will permit former students to return and continue their studies, and enable new students to specialize along the line of primary interest to them.

The Farmers' Short Courses are held in Agricultural Hall, one of the best academic buildings in the South, and admirably equipped in every respect for instruction in all phases of agricultural industries. The College of Agriculture has a staff of experts, and those attending will have the privilege of conferring with these men and acquiring as much information outside of the regular course as their time will permit. The courses are intensely practical, and according to the testimony of former students, have repaid them many times over for the expenditure of time and money required to take them. These courses afford the opportunity thousands of Georgia farmers have been looking for.

The object of these short courses is to present information at a minimum of cost and in a concrete form, so that the facts may be applied successfully in every-day work on the farm. Admission to

this course is free, a registration fee of \$1.00 being charged to cover incidental expenses. The cost to the student, therefore, consists of board while in Athens and railroad fare, of from \$15.00 to \$25.00.

The ages of those attending these courses range from 18 to 60 years. These courses are not intended for irresponsible boys, but for those who are actually engaged in farming, and the instruction has been so arranged as to provide the largest amount of useful information in the shortest possible time. The session for 1914 will open on January 5th, and continue for ten days. The work will be so arranged that those desiring to remain for more than ten days may do so.

COURSES IN COTTON INDUSTRIES. (Short course).

Ten Lectures on the Soil, including a discussion of its origin, character, composition and utility for crop production.

Ten Lectures on Fertilizers, including a discussion of the essential elements of plant food and methods of purchasing, mixing and applying these various constituents to the soil for the purpose of producing maximum crops at a minimum cost.

Five Lectures on Cotton Cultivation. These include methods of seed selection which may be adopted and successfully practiced by farmers for the improvement of the quality of the staple.

Five Lectures on Cotton Diseases. The principal diseases affecting cotton, the causes so far as known, and the best methods of combatting and eradicating them will be discussed.

Five Lectures on Cotton Insects. In these lectures the history, characteristics and the best methods of controlling the depredations of the various insects attacking the cotton plant, will be discussed.

Five Lectures on the Chemistry of Cotton By-Products. These lectures will deal with the preparation, history and commercial uses of such by-products as cotton seed oil, paper, cellulose, gun cotton, artificial silk and hair and viscose, which is used in making artificial leather and building material. Samples of the various by-products will be used for illustrative purposes.

Five Lectures on Machinery. The different forms of plows, cultivators and seeders which may be utilized so as to economize labor and increase the efficiency of soil cultivation will be considered.

Ten Demonstrations in Cotton Grading. In this course the student will have an opportunity to handle and grade ten or more samples of cotton each day just as the operation is performed on the warehouse floor. Cotton grading can be successfully taught and made the means of saving several millions of dollars annually to the farmers of Georgia.

Three Lectures on Cotton Marketing. These lectures will include

a discussion of the business of receiving, handling and shipping cotton.

The necessity for instruction in cotton industries will be made apparent by the fact that there is a loss in the value of the staple as nature produces it and as placed upon the market, of between ten and twenty millions of dollars every year in Georgia. This loss is largely avoidable and will be reduced materially when the handling and grading of cotton is made a part of the knowledge of the farmers in all parts of the state.

COURSE IN CEREAL PRODUCTION. (Short course).

This course is broader than its name implies, and includes a consideration of seed selection and crop rotation—two matters of vital importance to the welfare of Georgia agriculture. The widespread interest in increasing the yield of corn and growing a greater variety of cereals constitutes the primary reason for offering this course. The department of agronomy has every facility for carrying on the work in the most effective manner. Experiments in corn breeding and cereals production have been conducted in the demonstration field for several years, and furnish an abundance of data of vital importance to the students specializing along these lines. The course is as follows:

Five Lectures on Insects Injurious to Grain. A study of the life history of the more injurious insects will be made with suggestions as to methods of control.

Ten Lectures on Seed Selection. All cereals may be greatly improved both as to yield and quality of grain through seed selection. Experience shows that the seed used in Georgia should be produced at home. The data obtained in the College demonstration field will be used as the basis of instruction.

Ten Lectures on Crop Rotation. Crop rotation is undoubtedly the solution for small acreage and higher production per acre, as well as a means of having more than one crop for market. Different systems of rotation will be studied, also the influence of the rotation on general farm work. Special attention will be given to cover crops and their use in the state.

Ten Demonstrations in Cereal Judging. Cereal judging will include a systematic study of varieties by the score card, by actual measurement and scales, as well as germination tests. Students taking the course in cereal production will also elect fertilizers, soils and farm machinery.

COURSE IN LIVE STOCK FARMING. (Short course).

Georgia farmers have more than fifty million dollars invested in live stock, and in spite of this fact, at least one-tenth of the value

SCHEDULE OF RECITATIONS---SHORT COURSE FOR FARMERS.

January 5th to 16th, Inclusive, 1914.

	Tuesday, Jan. 6th.	Wednesday, Jan. 7th.	Thursday, Jan. 8th.	Friday, Jan. 9th.	Saturday, Jan. 10th.	Monday, Jan. 12th.	Tuesday, Jan. 13th.	Wednesday, Jan. 14th.	Thursday, Jan. 15th.	Friday, Jan. 16th.
9:00 to 9:55	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers	Fertilizers
10:10 to 11:05	Soils	Soils	Soils	Soils	Soils	Soils	Soils	Soils	Soils	Soils
11:05 to 12:00	Farm Machinery Diseases of Farm Animals	Farm Machinery Diseases of Farm Animals	Farm Machinery Diseases of Farm Animals	Farm Machinery Diseases of Farm Animals	Farm Machinery Diseases of Farm Animals	Cotton by- products Diseases of Farm Animals Varieties of Fruit Insects Injuri- ous to Grain	Cotton by- products Diseases of Farm Animals Varieties of Fruit Insects Injuri- ous to Grain	Cotton by- products Diseases of Farm Animals Varieties of Fruit Insects Injuri- ous to Grain	Cotton by- products Diseases of Farm Animals Varieties of Fruit Insects Injuri- ous to Grain	Cotton by- products Diseases of Farm Animals Varieties of Fruit Insects Injuri- ous to Grain
(1) 12:00 (2) to (3) 12:55 (4)	The Cotton Plant Feeding Farm Animals Diseases of Fruit Seed Selection	The Cotton Plant Feeding Farm Animals Diseases of Fruit Seed Selection	The Cotton Plant Feeding Farm Animals Diseases of Fruit Seed Selection	The Cotton Plant Feeding Farm Animals Diseases of Fruit Seed Selection	The Cotton Plant Feeding Farm Animals Diseases of Fruit Seed Selection	Cultivation of Cotton Feeding Farm Animals Insect Enemies of Fruit Seed Selection	Cultivation of Cotton Feeding Farm Animals Insect Enemies of Fruit Seed Selection	Cultivation of Cotton Feeding Farm Animals Insect Enemies of Fruit Seed Selection	Cultivation of Cotton Feeding Farm Animals Insect Enemies of Fruit Seed Selection	Cultivation of Cotton Feeding Farm Animals Insect Enemies of Fruit Seed Selection
(1) 12:55 (2) to (3) 1:50 (4)	Diseases of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Diseases of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Diseases of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Diseases of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Diseases of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Insect Enemies of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Insect Enemies of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Insect Enemies of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Insect Enemies of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation	Insect Enemies of Cotton Breeds and Breeding Orchard Man- agement Crop Rotation
(1) 3:10 (2) to (3) 5:00 (4)	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging	Cotton Grading Stock Judging or Clinics Spraying and Pruning Cereal Judging

Registration Day is Monday, January 5th, 1914. Bear this date in mind.

of the cotton crop is put into renewing live stock industries which should be developed within the borders of the state. On this account, a ten-day course of instruction for farmers who desire to specialize in live stock farming has been arranged at the College. The course is as follows:

Ten Lectures on Feeds and Feeding. This course will review the courses of feeding stuffs available for the maintenance of live stock, special emphasis being laid on the value of cotton seed and its by-products, and all other materials produced in the state which can be utilized to good advantage in animal nutrition.

Ten Lectures on Breeds and Breeding. In this course the origin, history and development of the various breeds of horses, cattle, sheep and swine adapted to Georgia will be considered.

Ten Lectures on Diseases of Farm Animals. This course includes a review of the methods used to control and eradicate contagious diseases of live stock, including U. S. quarantine regulations concerning the transportation of animals affected with contagious diseases and disease-producing parasites; a consideration of some of the more common diseases and ailments of farm animals, together with means of prevention and methods of treatment.

Five Clinics will be held to demonstrate the method of administering Anti-Hog Cholera Serum and other biological products, and a demonstration of the method of examination of horses for soundness, together with a consideration of the seriousness of various blemishes and unsoundness from an economic standpoint.

Five Demonstrations in Stock Judging. For the student electing the live-stock course practical work will be given in the afternoons in scoring farm animals, as well as actual work in show-ring placing. Students taking the course in live stock farming will also elect fertilizers and soils.

COURSE IN HORTICULTURE. (Short course).

Many persons are intensely interested in securing more definite knowledge concerning orchard management. This is especially true since the wonderful possibilities of apple production in north Georgia have become more generally appreciated. To meet this public demand a specialized course in horticulture has been provided.

Five Lectures on Varieties of Fruit. In this course will be given a discussion of the varieties of apples, pears, peaches, etc., as recommended for commercial culture in the various sections of the state by the Horticultural Society.

Ten Lectures on Orchard Management. These will include discussions of site, location, choice of plants, planting, tillage, cover crops, fertilization, pruning, thinning, frost, spraying, picking, packing and selling.

Five Lectures on Diseases of Fruits. Brown Rot, Apple Scab, Pear Blight, and other diseases incident to the culture of the tree fruits in Georgia will be considered.

Five Lectures on Insects of Fruits. The Codling Moth, Plum Curculio, Peach Borer and other insects incident to the culture of tree fruits in this state will be discussed.

Ten Demonstrations in Spraying and Pruning, consisting of practice in mixing and applying sprays, fighting frost, pruning trees, etc.

Students taking the course in horticulture will also elect fertilizers, soils and farm machinery. The schedule of recitations for these short courses is shown on another page and is self-explanatory.

WHY FARMERS SHOULD ATTEND THESE COURSES.

The boll weevil will reach the state perhaps this year, and it becomes imperative for the farmers of Georgia to understand the principles of plant and animal breeding, seed selection, more about crop rotation, fertilizers, and how to utilize lint cotton to the best advantages. The Farmers' Short Courses afford these opportunities at a minimum of cost to every white citizen of the state.

Those desiring further information should write for our special circular on the short courses.

ANNUAL MEETINGS OF FARMERS' ORGANIZATIONS

The Georgia Dairy and Live Stock Association, the Georgia State Horticultural Society, and the Georgia Breeders' Association held their annual meetings at the College, January 15, 16, 17, 1913. An attempt was made to reach and serve the interests of all class of citizens engaged in agriculture. The attendance was unusually large, and since those engaged in horticulture or dairying are often interested in both lines of farming, the joint meeting of the several associations presents many advantages to the members and saves both time and money. By meeting at the College, the several organizations are afforded an opportunity to study the progress made in agricultural science during the year and to confer with the experts in charge of the several departments. The student body is greatly benefited by the chance afforded for personal contact with practical men who are making a success of the lines of work in which they are engaged. Thus several important purposes are served through the arrangement of a joint conference of the organizations chiefly concerned in promoting the welfare of Georgia farmers. A determined effort will be made to increase the membership of all the organizations and make the meeting of 1914 the best which has ever been

held. Plans have already been made to secure the services of several experts of national reputation to address the several organizations at the next annual meeting.

The advisability of holding such a general conference is shown by the fact that the fertility of our lands is decreasing, the depredation of insect pests and plant diseases becoming greater each year, and the purchase and use of fertilizers more necessary. How shall the farmer obtain the needed information with referenc to these matters save through some such clearing house for agricultural information as the State College of Agriculture affords? Education measures the success and progress of a nation. We have neglected agricultural education in America because of our marvelous natural resources. But nature has rebelled, and now we must inaugurate crop rotations and give greater attention to the development of our live stock industries. There is need, therefore, for the dissemination of definite information relating to farm life and work in order that our present agricultural supremacy as well as the prosperity of the farmer may be assured not only for the present but for the future.

The meeting for 1914 will be held January 20, 21, 22, as there is more leisure on the farm at this time than at any other season. Every farmer should take a holiday and accord the same privilege to his wife. That such gatherings are beneficial is shown by the fact that 1,000 farmers attend meetings of this kind in some of the states where the agricultural college has been established on a substantial basis. Our farmers will find it quite as beneficial to them to attend these gatherings as those living in other states. Since the cost will only include railroad fare and one dollar a day for board while in Athens, there can be no question as to the advantages which will accrue to the individual who attends these gatherings and learns about the new facts of agriculture which it is necessary for him to know in order to conduct his business along the most profitable lines.

EXTENSION TEACHING

It is the purpose of the College of Agriculture to aid all educational activities which are being carried on in the state. The fulfillment of this purpose is one of its greatest obligations to the State and every effort will be made to further the work of extension teaching. Two great ends are to be subserved by work of this character. First, the systematizing of the educational activities of the state and the raising of these to a higher level of efficiency. Second, the dissemination of useful knowledge which has accumulated in recent years, but is not as generally appreciated as it should

be, and which cannot be brought to the attention of adults and those remotely situated from the College save through extension agencies. Recognizing the importance of this character of work, the General Assembly of Georgia during the annual session 1911 appropriated \$40,000 to the State College of Agriculture to be used for extension teaching.

In accordance with this action of the legislature, the Board of Trustees has reorganized the work of the several departments constituting the College, along lines which permit of carrying on their proper share of extension work in the most efficient manner possible. There is a general extension office with a secretary in charge. Through this office the extension schools, educational trains, farmers' institutes, and miscellaneous meetings are largely organized and directed. Every member of the College staff gives some of his time and effort to extension activities.

The department of agronomy is laying down series of test plats on different type soils of the state to secure data concerning their principal defects, and what forms of fertilization and crop rotation are best adapted to build them up. This department maintains a twenty-acre field for the purpose of carrying on investigations relative to corn and cotton breeding, crop rotations, fertilizers and soil management. This information is invaluable to the people of the state and is distributed in bulletin form through the meetings held by the extension service.

The traveling field representatives of the department of agronomy are also engaged in advising the farmers relative to the improvement of certain strains of corn and cotton which are being developed through seed selection or hybridization.

The department of agricultural chemistry has undertaken a physical survey of several counties and is making analyses of all the type soils found therein. A close coöperation of necessity exists between the departments of agronomy and agricultural chemistry in this work, which is of the most fundamental character, since it means to ascertain the soil deficiencies and determine the methods by which these can be overcome. Several men are employed by this division.

The department of animal husbandry is carrying on work along several lines. First, it is endeavoring to coöperate with farmers in the purchase and dissemination of improved breeds of live stock so that breeding centers may be established in a number of communities. Secondly, an expert is advising dairy farmers as to the best types of barns and silos to erect, and supervising the feeding and management of a number of dairy herds as well. On the College farm more than 150 head of live stock are maintained for

the purpose of securing data and information to be distributed in bulletin form to be used at extension schools and other meetings held throughout the state.

An instructor in poultry husbandry has charge of this special line of work, and is prepared to advise with all interested in this important industry.

The department of horticulture is carrying on extension work in connection with the peach, apple, pecan and trucking industries. Demonstrations on spraying, pruning and orchard heating and other frost fighting apparatus will be made during the year.

The department of farm mechanics is prepared to assist farmers in the preparation of plans for farm houses, barns and other out-buildings necessary on an up-to-date farm.

The department of cotton industry is distributing seed of the Sunbeam variety which is proving to be resistant to anthracnose, and is engaged in investigating many vital problems associated with the more economic production of cotton in the state.

The department of veterinary medicine is manufacturing hog cholera serum. It is possible through the use of the serum to largely control the destruction wrought by hog cholera. Its importance, therefore, needs no further emphasis. This department is also cooperating in every possible way with those agencies which are endeavoring to eradicate the cattle tick, and to control many diseases which cause serious loss to Georgia farmers.

Some of the most effective work done by the College is through the organization of the Boys' Corn Clubs and Girls' Canning Clubs. Separate departments are maintained for this service, and the interest has grown to such an extent that six special agents with headquarters at Atlanta, Savannah, Augusta, Tifton, Rome and Columbus, are maintained in the field. Georgia is the only state to provide local agents for the inspiration and redirection of the efforts of her boys and girls. This constitutes one of the most important lines of activity being carried on through the extension work of the College.

The various departments enumerated act as a clearing house of agricultural information for Georgia farmers.

During the year 817 meetings were held, and 101,201 people reached exclusive of those served through correspondence and by distribution of bulletins. Over 121,066 miles of travel were entailed to render this service, which included the organization of 54 itinerant schools, attended by 3,404 people; 120 farmers' institutes, attended by 23,350 people; boys' and girls' clubs in 139 counties, with an aggregate enrollment of 10,000; 20 teachers' institutes, attended by 1,842 teachers; 52 miscellaneous meetings, attended by 3,222 peo-

ple; 485 boys' corn club meetings, attended by 64,386 people; 86 girls' canning club meetings, attended by 4,997 people. In addition over 250 people attended the meetings of the various organizations held at the college.

It is believed that one of the most efficient ways by which the farmers can be served is through the organization and promotion of extension or traveling schools. Fifty-four two-day extension schools were held during the spring of 1913, at the following places: Powder Spring, Carrollton, Tifton, Quitman, Thomasville, Doerun, Attapulcus, Edison, Shellman, Fort Gaines, Georgetown, Dawson, Woodland, Summerville, Thomaston, Villa Rica, Cedartown, Fayetteville, Decatur, Jasper, Blue Ridge, Eton, Greenville, LaFayette, Ringgold, Adairsville, Dalton, Monroe, Madison, Granite Hill, Folkston, Jesup, Blackshear, McRae, Rochelle, Eastman, Dublin, Reidsville, Pembroke, Springfield, Sylvania, Metter, Millen, Jeffersonville, Barnesville, Wellston, Warrenton, Lincolnton, Carnesville, Toccoa, Clayton, Clarkesville, Gainesville, Jefferson. As the schools are still in progress at this writing, the complete record of attendance cannot be given.

The response to this work has been most gratifying, and judging from the expressions of those in attendance, it is the most satisfactory method of reaching farmers that has yet been devised. The demand for meetings has been such as to make it clear that the present appropriation will be insufficient to meet the requirements of the work. These schools are conducted in a thoroughly practical manner. Among the topics discussed are the mixing and application of fertilizers, soils and soil cultivation, tillage and tillage implements, the selection and improvement of seed corn and cotton, diseases of live stock, dairying, fruit and truck problems, spraying and orchard management, the feeding and care of live stock. Demonstrations constitute an important feature of these schools. For instance, a clinic is held at which all the sick animals brought in are treated by a competent veterinarian. There are also spraying, dairy and seed testing demonstrations. Charts, models and other materials are carried along and a number of the lectures are illustrated. In this way the subject matter is presented in a graphic and practical manner, so practical indeed that many farmers who have attended the schools found it feasible to put the suggestions made by the instructors into practice with great benefit. The value of a system of extension teaching of this character can never be accurately estimated, but those who have seen the marvelous improvement in farm practice which has followed in the wake of limited effort in this direction realize fully what a systematic extension bureau may accomplish in stimulating an interest in better methods of farming.

Another feature emphasized by the extension department is the

organization of boys' and girls' industrial clubs. The boys are being encouraged to grow corn under the specific rules and regulations laid down by the College, and the girls to organize canning clubs and to take a greater interest in cooking and sewing. Wonderful progress is being made this year. In this work the extension department has had the sympathetic coöperation of the great majority of the county school commissioners, of the Farmers' Union, the State Department of Agriculture, and a number of congressmen. Liberal prizes have been offered by a number of organizations and individuals so that the boys and girls entering these contests will have the privilege of competing for premiums totalling several thousand dollars. Through the organization of these clubs the attention of the boys and girls is being directed to a more thorough appreciation of the possibilities of the soil, the need of using fertilizers and acquiring a consistent knowledge of plant and animal life. In other words, agricultural instruction of a fundamental character is being introduced into the schools of the state and the fact that the boys have often been able to produce 100 bushels of corn per acre where their fathers were contented with 10 to 15, has demonstrated the great cultural and economic value of work of this character.

Speakers will be sent from the College to address farmers' gatherings or to discuss subjects of special interest to a given community. The officers of the College are working in coöperation with the county school commissioners, and lectures will be sent to teachers' institutes for the purpose of discussing ways and means by which instruction in agriculture in the common schools as provided for by law may be inaugurated. There is no service which can be rendered the people of the state at this time more important than that of fostering the teaching of the underlying principles of agriculture in the public schools. The teachers are not to blame for the apparent neglect of this subject, as there has been no channel through which they might obtain the needed information.

Another feature of extension work which the College is fostering is correspondence with farmers. Thousands of letters are annually answered, giving definite information relative to fertilizers, soils, crops, care and management of live stock, orchards and gardens. Every farmers in the state is invited to take advantage of the free correspondence course now conducted so extensively by the College, for in this way at the cost of a two-cent stamp any individual may obtain information worth a great deal of money to him with the least possible effort, and without the necessity of purchasing expensive books or taking a long trip to acquire the information. The College stands ready through its staff to assist every organiza-

tion and every individual entitled to its service free of cost. As the College is now in position to organize a number of extension schools for teachers, it is believed that substantial progress may be anticipated.

FARMERS' INSTITUTES

The Board of Trustees of the University organized a farmers' institute system on January 16, 1903. When the Board of Trustees of the Agricultural College was created the management of the farmers' institutes was transferred to it. For several years the institutes were under the charge of Hon. Harvie Jordan, who, however, found the work so onerous and exacting that he decided to withdraw from it on November 1, 1907, when the work was turned over to the direction of Andrew M. Soule.

One hundred and twenty farmers' institutes were held during the past year at the following places: Pidcock, Camilla, Blackshear, Waycross, Meigs, Cairo, Folkston, Hahira, Donaldsonville, Moultrie, Edison, Ludowici, Tifton, Hinesville, Nashville, Blakely, Pembroke, Shellman, Reidsville, Ocilla, Ft. Gaines, Lyons, Ashburn, Georgetown, Cordele, Dawson, McRae, Vienna, Albany, Hazlehurst, Bryonville, Sylvester, Baxley, Lessburg, Pitts, Jeffersonville, Americus, Eastman, Ellaville, Dublin, Oglethorpe, Cusseta, Wrightsville, Woodland, Preston, Sandersville, Reynolds, Lumpkin, Louisville, Forsyth, Buena Vista, Stillmore, Barnesville, Hamilton, Millen, Thomaston, Dink, Locust Grove, LaGrange, Sylvania, Franklin, Springfield, Newnan, Waynesboro, McDonough, Carrollton, Jackson, Bowden, Harlem, Union City, Dearing, Douglasville, Cedartown, Linton, Acworth, Milledgeville, Cartersville, Rome, Gray, Eton, Summerville, Monticello, Canton, LaFayette, Rayle, Jasper, Trenton, Lincolnton, Ellijay, Monroe, Crawfordville, Blue Ridge, Jefferson, Eatonton, Lexington, Ringgold, Danielsville, Dalton, Covington, Elberton, Calhoun, Conyers, Hartwell, Dallas, Decatur, Carnesville, Lawrenceville, Alpharetta, Clarkesville, Adairsville, Clayton, Hiawassee, Blairsville, Demorest, Cleveland, Dawsonville, Fayetteville, Gainesville, Commerce, Jesup.

Institutes were offered to the remaining counties, but for various reasons satisfactory arrangements could not be made for the meetings.

From one to three speakers were sent to the following places where either farmers' meetings or educational rallies were held; if speakers were sent more than once, the number is indicated in brackets:

Lafayette, Sandersville, Warthen, Wrens, Springplace, Blackshear, Camden, Savannah, Waycross, Folkston, Thomasville, Donaldson-

ville, Covington, Dublin, Pine Log, McRae, Pidcock, Elberton, Rome, Commerce, Hartwell, Carnesville, Kensington, Atlanta (2), Albany, Macon (6), Augusta (3), Blakely (2), Edison (2), Camilla, Newton, Cairo, Boston, Quitman, Coolidge, Moultrie, Ft. Gaines, Cambridge, Arlington, Leesburg, Jonesville.

Representatives of the College addressed teachers' institutes at the following places during the year: Tifton, LaFayette, Calhoun, Decatur, Monroe, Eton, Newnan, Colquitt, Cusseta, Dahlonega, Ringgold, Clarkesville, Cass Station, Rome, Jonesboro, Blairsville, Euahlee, Toccoa, Millen, Dalton.

The work of the past year was more successful than ever before. An agricultural awakening is sweeping over Georgia, and if the increase in enthusiasm is as great in 1913 as it was in 1912, a larger sum of money must be appropriated by the state or institutes can not be held in many communities seeking them.

It is a pleasure to acknowledge the cordial coöperation and support extended to the institute work by leading citizens in every section where representatives of the College went; but for their assistance as well as that of the local press the meetings would not have been successfully organized. The list of meetings as enumerated above does not include a large number of points visited by representatives of the College to address, for instance, meetings of the Farmers' Union and other organizations of agricultural workers.

Representatives will gladly be sent to meetings of any organizations which have the welfare of the farmer at heart, and are endeavoring to disseminate information which will enable him to conduct his operations more successfully.

County Institute Officers.

County	President	Secretary
Appling	G. H. Tillman, Surrency	Ira Leggett, Baxley
Baldwin	Geo. Hollingshead, Jr., Milledgeville	
Bartow	W. M. Dodd, Adairsville	W. W. Trimble, Adairsville
Berrien	W. H. Griffin, Nashville	R. M. Mathis, Nashville
Brooks	W. W. Rast, Pidcock	J. W. Patterson, Pidcock, 1
Bryan	J. B. Bacon, Pembroke, 1	E. L. Lanier, Pembroke
Bulloch	J. W. Williams, Statesboro	
Burke	J. W. Hendrix, Sardis	
Butts	J. J. Mapps, Jackson, 5	S. Kirby Smith, Jackson
Calhoun	J. E. Goodwin, Edison	C. S. Sealy, Edison
Campbell	Robert Tatum, Union City	J. C. Langston, Fairburn
Carroll	W. L. Nix, Calvin, 2	L. W. Cunningham, Carrollton, 6
Carroll	J. L. Lovvorn, Bowdon	
Catoosa	W. E. Bryan, Ringgold	
Chattooga	Arthur Wheeler, Summerville	S. C. Jones, Summerville
Charlton	C. C. Powell, Folkston	A. H. Howard, Uptonville
Chattahoochee	R. W. Christian, Cusseta	N. A. Felton, Cusseta, 3
Cherokee	J. B. Keith, Canton	F. M. Bishop, Canton

County	President	Secretary
Clay	R. C. McAlister, Ft. Gaines	J. W. Suttle, Ft. Gaines
Cobb	Mr. McClain, Acworth	Joe Abbott, Acworth
Colquitt	C. W. Turner, Moultrie, 3	W. P. Hires, Moultries, 5
Columbia	S. R. Phillips, Harlem	B. P. Mundy, Harlem
Coweta	B. L. Redwine, Newnan	Garland Jones, Newnan
Crisp	J. B. Atkins, Cordele	G. A. Tarpley, Cordele
Dawson	A. W. Vandever, Dawsonville	E. M. Fowler, Dawsonville
Decatur	J. T. Brown, Donaldsonville	W. H. Vanlandingham, Donaldsonville
DeKalb	J. C. Maness, Ingleside	L. S. Bottenfield, Ingleside
Dodge	C. M. Methvin, Eastman	B. T. Keith, Eastman
Dooley	J. M. Woodward, Vienna	E. E. Lewis, Vienna
Dougherty	W. B. Bullard, Albany	E. B. Adams, Albany
Douglas	J. T. Lee, Douglasville	W. W. Gresham, Douglasville
Early	D. W. James, Blakely	Joe. Freeman, Blakely
Effingham	J. W. Reiser, Clio, 2	B. W. Cubbedge, Guyton
Elbert	V. H. Jones, Elberton, 4	C. C. Whitesides, Elberton
Emanuel	O. Warren, Stillmore	L. Homer Edenfield, Stillmore
Fayette	A. O. Blalock, Fayetteville	W. M. Speer, Fayetteville
Fannin	Jas. P. Ritchie, Blue Ridge	Jno. B. Payne, Blue Ridge
Floyd	J. C. King, Rome	A. P. Jones, Rome
Franklin	Robert Fardum, Carnesville	J. W. South, Carnesville
Gilmer	B. S. Holden, Ellijay	J. T. DeWeese, Ellijay
Gordon	Thomas Rogers, Calhoun	E. Dillard, Calhoun
Grady	K. C. Moore, Cairo	Eugene Clower, Cairo
Gwinnett	C. R. Ware, Lawrenceville	
Habersham	M. C. Gay, Clarkesville	
Habersham	Dr. Frank Jenkins, Demorest	
Hall	W. E. Deal, Gainesville, 4	E. W. Johnson, Gainesville
Hancock	J. T. McClesky, Sparta	
Hart	A. J. McMullan, Hartwell	T. B. Thornton, Hartwell
Harris	B. F. Williams, Hamilton	J. M. Whitehead, Hamilton, 4
Heard	W. H. Daniels, Newnan	
Henry	T. J. Upchurch, Locust Grove	
Irwin	G. T. Young, Ocilla	F. M. Paulk, Ocilla
Jackson	L. G. Hardman, Commerce	J. D. Chandler, Commerce
Jackson	Luther Elrod, Jefferson	
Jasper	Rufus Smith, Monticello, 2	J. D. Lane, Gladeville, 1
Jefferson	T. Y. Smith, Louisville	S. M. Clarke, Louisville
Jenkins	S. C. Parker, Millen	Jas. Moore, Scarboro
Jeff Davis	I. L. Jones, Hazelhurst	J. A. Cromartie, Hazelhurst
Jones	Ralph Childs, Wayside	M. C. Green, Gray
Johnson	W. M. Faircloth, Wrightsville	J. L. Harris, Kite
Laurens	M. S. Jones, Dublin	J. B. Tyre, Dublin
Lee	A. B. Martin, Leesburg	J. R. Miller, Leesburg
Liberty	J. H. Parker, Ludowici	W. H. Hughes, Ludowici
Liberty	E. B. Way, Hinesville	L. E. Stafford, Hinesville
Lincoln	W. C. Powell, Pansy	Jno. M. Wright, Lincolnton
Lowndes	W. W. Webb, Hahira	
Macon	J. P. Nelson, Oglethorpe	R. H. Stubbs, Oglethorpe
Macon	G. W. Beasley, Byromville	W. H. Byrom, Byromville
Madison	W. S. Sanders, Danielsville	J. N. Griffith, Danielsville
Marion	B. T. Peacock, Buena Vista	S. L. Fleming, Tazewell

County	President	Secretary
McDuffie	J. J. Pennington, Dearing	D. A. Howard, Dearing
Milton	T. Shirley, Alpharetta	T. L. Parker, Alpharetta
Mitchell	J. P. McRee, Camilla	E. M. Davis, McRae
Monroe	Thos. G. Scott, Forsyth	R. S. Fort, Forsyth
Murray	Dr. T. W. Colvard, Eton	J. C. Ellis, Eton
Newton	Henry Odum, Covington	J. A. Cowan, Covington
Oglethorpe	W. H. Faust, Lexington	
Paulding	Dr. J. R. Ritch, Dallas	W. M. Turner, Dallas
Pickens	G. M. Bell, Jasper	J. H. Little, Jasper
Pierce	Q. A. Smith, Blackshear, 2	Samuel Ake, Blackshear
Pike	W. H. Maxwell, Barnesville	H. G. Woodall, Barnesville
Polk	Geo. C. Benedict, Cedartown	J. M. Hamrick, Cedartown
Putnam	W. C. Wright, Eatonton	
Quitman	I. L. Balkham, Georgetown	W. A. Hill, Georgetown
Rabun	L. M. Chastain, Clayton	
Randolph	R. F. Crittenden, Shellman	Oscar Crittenden, Shellman
Rockdale	W. L. Peak, Conyers, 5	L. A. Bowen, Conyers, 4
Schley	B. F. Green, Americus, 2	R. J. Perry, Ellaville, 2
Screven	J. H. Evans, Sylvania	W. C. Howard, Sylvania
Stewart	W. T. Holliday, Lumpkin	W. S. Boyett, Lumpkin, 4
Talbot	Gardner Culpepper, Woodland	A. J. Jordan, Woodland
Tallaferry	W. O. Holden, Crawfordville	W. O. Wright, Crawfordville
Tattnall	I. S. Smith, Reidsville	
Taylor	J. A. Mathews, Reynolds	R. L. Bodiford, Reynolds
Terrell	H. A. Petty, Dawson	C. T. Jordan, Dawson
Thomas	Thomas Davis, Meigs	W. M. Davis, Meigs
Tift	J. W. Hollis, Tifton	W. C. Martin, Tifton
Toombs	W. T. Mays, Ochoopee	J. L. Jones, Lyons, 1
Towns	Jesse M. Rice, Hiawassee	John M. Johnson, Hiawassee
Troup	F. M. Longley, LaGrange	W. L. Cleveland, LaGrange
Turner	A. S. Bussey, Ashburn	B. T. Reeves, Ashburn
Twiggs	B. S. Fitzpatrick, Fitzpatrick	W. O. Birdsong, Jeffersonville
Union	E. S. Crawford, Blairsville	C. E. Rich, Blairsville
Upson	W. H. Dallas, Thomaston	H. W. Barron, Thomaston
Walton	B. H. Jenkins, Monroe	Eugene Baker, Monroe
Walker	J. Suttle, Greenbush	F. B. Loyd, LaFayette, 5
Washington	I. A. Smith, Tennille	W. M. Kelly, Tennille
Wayne	J. P. Shedd, Jesup	R. L. Millikin, Jesup
Webster	C. C. Tracy, Preston	J. R. Stapleton, Preston
White	J. P. Evans, Cleveland	J. N. Bell, Cleveland
Wilcox	W. M. King, Pitts	A. J. King, Pitts
Whitfield	C. L. Foster, Dalton	
Wilkes	J. Luke Burdett, Rayle	
Worth	J. W. Mathews, Sylvester	J. R. Miller, Sylvester

Those counties interested in securing a meeting for 1913 should correspond with the College at the earliest possible date, so that arrangements may be made for the meetings some time in advance. The appropriation for holding institutes is very small, and as the work has to be done by a few men, it is necessary to prepare a schedule of meetings in advance, so as to save money and conserve the time of the instructors. Correspondence with reference to insti-

tutes is invited. If the farmers will coöperate with the College the best work ever done through this arm of the extension service can be accomplished during the year 1913. A report containing outlines of addresses delivered before the various farmers' institutes has been printed and is being distributed. Printed reports of leading addresses delivered at the College before the annual meetings of various state associations will be mailed free to any citizen in the state. It contains more than 250 pages, and some excellent papers on agricultural practice in Georgia. Every progressive farmer should have a copy of this report.

For further information, write the

GEORGIA STATE COLLEGE OF AGRICULTURE,

University of Georgia,

Athens, Ga.

REGISTER OF STUDENTS, 1912-1913

MASTER OF SCIENCE IN AGRICULTURE.

Childs, Ross Renfroe	Round Oak.
Hollingshead, Robert Sullivan	Athens.
Hunnicut, Benjamin Harris	Lavais, Brazil.
Kiger, Charles Merton	Athens.
Sell, Edward Scott	Athens.
Wells, Cornelius Augustus	Athens.

BACHELOR OF SCIENCE IN AGRICULTURE.

Senior.

Ballard, Robert Lee	Forest Park.
Bennett, William Tapley	Maxeys.
Boyett, William Jack	Morris Station.
Garrison, Frank Davis	Cornelia.
Howard, Robert Powell	Barnesville.
Liddell, Julian Gordon	Atlanta.
Rothe, Henry Hino	Athens.
Watson, Luther Stephens	Loganville.
Williams, John Benjamin	Fort Valley.
Wilson, Wilbe Radford	Athens.
Woodruff, Joseph Grady	Dacula.
Worrall, Lloyd	Barberton, South Africa.
Young, John Law	Canton, China.

Junior.

Asbury, Thomas Lyne	Crawfordville.
Bryant, Clarence Avery	Royston.
Buchwald, Charles	Athens.
Corley, Otis Herman	Athens.
Davis, Jefferson Irwin	Quitman.
Dillard, Edward Carleton	Arnoldsville.
Hains, John Thomas	Augusta.
Hurst, William Herbert	Social Circle.
Johnson, Janes Augustus	Barwick.
Loyd, Dewitt Wilson	Newborn.
Martin, Clarence Ellwood	Blakely.
O'Kelley, Edward Barbara	Gainesville.
Parman, Everette	Athens.
Tabor, Paul	Danielsville.
Westbrook, Edison Collins	Gainesville.
Wimberly, Olin John	Macon.

Sophomore.

Adair, Shields Brownfield	Bowman.
Austin, Won Tang	San Francisco, Cal.
Birch, George Snider, Jr.	Macon.
Breedlove, R. Edward	Campton.
Burns, William Arnold	Commerce.
Burrage, Clarence Hill	Saluda, N. C.
Chandler, Farish Carter Tate	Commerce.
Davis, Clarence Barney	Tennille.
Davis, Joel Joseph	Tifton.
Firor, George Henry	Athens.
Fort, William Ray	Morrow.
Fry, Gilbert	Athens.
Gunn, John McKenzie	Cuthbert.
Harrell, Joseph E.	Gainesville.
Hastings, William Raymond	Atlanta.
Head, Broadus John	Gainesville.
Headley, Chauncey Green	Boston.
Horn, Chan	San Francisco, Cal.
Jones, Percival Connally	Herndon.
Little, Bird	Duluth.
Lufburrow, Burley Mathew	Oliver.
Morgan, John Guy	Mansfield.
Moss, John Hill	Athens.
McConnell, Bright	Commerce.
Nanney, William Clyde	Brunswick.
Pedrick, Scott Hicks	Quitman.
Proctor, Lannie Groover	Brooklet.
Ragsdale, Elmo	Cornelia.
Redd, Marion W.	Columbus.
Rountree, Ridge	Cobbtown.
Stanley, William Kinnebrew	Quitman.
Stewart, Joseph Spencer, Jr.	Athens.
Ward, Frank Crawley	Lumpkin.
Winn, Courtland S., Jr.	Atlanta.
Woodall, James Fletcher	Woodland.
Wright, Homer, Jr.	Grantville.

Freshman.

Adams, Ben Terry	Macon.
Andrews, Hugh Ector	Milledgeville.
Barlow, William Wallace	Cochran.
Barnett, Edward Augustus	Washington.
Belser, Richard J.	Montgomery, Ala.
Brown, Henry Lowrance	Flowery Branch.

Buffington, Herbert E. -----	Gillsville.
Bush, Newton Gale -----	Barnesville.
Cannon, David Terrell -----	Clayton.
Chandler, Otis Obie Ashmore -----	Commerce.
Collins, Morris Wm. Hallowell -----	Ft. McPherson.
Collins, William Olin -----	Douglasville.
Cromartie, Esten Graham -----	Hazlehurst.
Cromartie, Hendrick Lafayette -----	Hazlehurst.
Curtis, William Neel -----	Mansfield.
Dennis, Joseph L., Jr. -----	Atlanta.
Dimmock, Avary Miller -----	Atlanta.
Edwards, Henry Grady -----	Oxford.
Erwin, Julien -----	Athens.
Estes, Royce Nathaniel -----	Gay.
Freeman, Thomas Cleveland -----	Commerce.
Fry, Henry Lee -----	Clarkesville.
Harber, Lamar Lucius -----	Royston.
Hasty, William Dozier -----	Chickamauga.
Hill, Pope Russell -----	Toccoa.
Hillis, Henry Clayton, Jr. -----	Girard.
Holliday, Paul Lovejoy -----	Athens.
Johnston, Jack Allen -----	Franklin, N. C.
Jones, Guy Rudolph -----	Norcross.
Lanier, Fleetwood -----	Athens.
Lasseter, Horace Shelby -----	Vienna.
Malone, Kirby Smith -----	Monticello.
Mathews, James Olin -----	Bronwood.
Metcalf, Alston Mitchell -----	Athens.
Miller, Charles Cox -----	Richland.
Miller, William Paul -----	Columbus.
Moon, Steve Clay -----	Powder Springs.
Moorhead, Orian Elexander -----	Buckhead.
McCall, Lewis -----	Norfolk, Va.
McCaskill, Allen Robert -----	Bainbridge.
Nash, Davis Acton -----	Philomath.
Neville, George -----	Rabun Gap.
Nicholson, John Walter -----	Athens.
Novins, Jack -----	New York, N. Y.
Purcell, Jones -----	Lavonia.
Rush, John Paul -----	Adairsville.
Rutherford, William Fred -----	Union Point.
Smith, Lafayette Richmond -----	Clayton.
Smith, Pulaski Sykes -----	Bellville.
Sorrells, William Holman -----	Athens.

Starr, Hoyt Augustus	Mansfield.
Summers, Walter Y.	Sargent.
Sweet, Charles B.	Athens.
Troutman, Baldwin Lyttleton	Athens.
Veach, Lafayette	Trion.
Wagner, John Nathan	Newbern.
Walker, Pierre Gautier	Madison.
Wilder, Cecil Norton	Pelham.
Wiley, Henry Gibbs	Eastanollee.
Wood, Joseph Henry	Douglas.

ONE-YEAR COURSE IN AGRICULTURE.

Alexander, Joseph Remer	Reidsville.
Allen, Beverly Pierce, Jr.	Athens.
Allison, Mance Thomas	Chickamauga.
Biggers, Willis Adolphus	Greenville.
Blanton, Fred Willmont	Mooreboro, N. C.
Boswell, Julius Adolphus	Penfield.
Briggs, W. Prescott, Jr.	Athens.
Camp, William Ray	Campton.
Cobb, Howell	Athens.
Colquitt, Hopson Felix	Lexington.
Dillard, Thomas Hiram	Dillard.
Dukes, E. T.	Moultrie.
Dusenbury, John Calhoun	Savannah.
Echols, Robert Bonner	Atlanta.
Fenn, Fred Arthur	Moultrie.
Fleming, Allen Randolph, Jr.	Athens.
Gaissert, George Turner	Buckhead.
Garnett, Thomas Harwood	Charlotte, C. H. Va.
Gibbs, Edgar Allen	Ty-Ty.
Glover, Addison Reese	Monticello.
Guess, W. Samuel	Denmark, S. C.
Holland, Benjamin F.	Dallas.
Hook, Huntington Lamar	Augusta.
House, Ferd McConnell	Gillsville.
Ingram, Robert F., Jr.	Atlanta.
Jones, Weaver Harrison	Madison.
Jordan, Edwin J.	Waycross.
Lavender, Walter Ellis	Haralson.
Leath, Ben	Kensington.
Lobdell, Harvey S.	Chicago, Ill.
Lumsden, Jesse Cornelius	Talbotton.
Martin, Charles Jones	Flemington.

Mathews, Lewis Potter	Talbotton.
Moss, Rufus Lafayette	Athens.
Nasworthy, Millard Gambol	Dawson.
Olson, Charles Willard	Atlanta.
Phillips, Allen Martin	Climax.
Phillips, Charles Pelham Love	Thomasville.
Smith, William Joseph	Woodland.
Strickland, Joseph Henry	Roswell.
Trimble, Robert Lee	Trimble.
West, William Leon	Athens.
Williams, Willis Bryan	Savannah.
Wilson, Joseph Lawson	Eatonton.

SPECIAL STUDENTS IN AGRICULTURE.

Bowers, Mary H.	Columbus.
Brand, Tom Sherman	Augusta.
Gowan, Charles Lee	Athens.
Hobson, William Grasty	Rutherford, N. J.
Martin, Benjamin Edward	Athens.
Paddock, David F.	Brooklyn, N. Y.
Pessin, Louis	New York, N. Y.
Stone, Bonnell Harold	Oxford.
Theus, Charlton M.	Savannah.
Wiggins, Joe	Savannah.

SHORT COURSE STUDENTS IN AGRICULTURE.

Adams, Owen Mathis	Tennille, Ga., R. F. D. No. 1.
Adams, Jos. T.	Elberton, Ga., R. F. D. No. 6.
Alexander, Miss Carlotta	Washington, Ga.
Anthony, Clarence L.	Pine Log, Ga., R. F. D., No. 1.
Arnold, Joseph Wilson	Dry Branch, Ga.
Baldwin, Miss Eula	Fletcher, N. C.
Bennett, Chas. Lester	Jefferson, Ga., R. F. D. No. 6.
Bozeman, Oswell Agira	Shingler, Ga.
Bradford, Dr. Wm.	Cedartown, Ga.
Brown, John Benjamin	McDonough, Ga., R. F. D. No. 3.
Brown, Edward M.	Middleton, Ga.
Bullard, William Henry	Camilla, Ga.
Chamblee, Alex. Stephens	Bartow, Ga., R. F. D. No. 2.
Chastain, John Albert	Thomasville, Ga.
Collier, Vines Lester	Meansville, Ga.
Collins, Eugene Seymour	Blakely, Ga.
Collins, Mary O.	Turnerville, Ga.
Cown, Sam Mark	Union City, Ga.
Cornelius, Wm. Oliver	Cedartown, Ga.

Cox, Chas. Sherman	Cass Station, Ga.
Cromer, Dr. Lindsey Carlton	Union Point, Ga.
Cubbedge, Bart Williams	Guyton, Ga.
Cunningham, G. V.	Tifton, Ga.
Daniel, Wyatt Heflin	Newnan, Ga., No. 68 College Street.
Davis, Billy Jeff	Taylorsville, Ga., R. F. D., No. 1.
Davis, Corbin Lyman	LaGrange, Ga., R. F. D. No. 3.
Dowling, Samuel Leonard,	Valdosta, Ga.
Durham, Garrett Reginald	Ashburn, Ga., R. F. D. No. 3.
Eskew, David Bryant	Eastanollee, Ga.
Foster, Chas. LaFayette	Dalton, Ga., R. F. D. No. 5.
Freeman, Robert Wallace	Lamar, Ga., R. F. D. No. 1.
Gay, Richard Dawson	Cuthbert, Ga.
Giles, J. K.	Atlanta, Ga., Chamber of Commerce.
Giles, George F.	Fairburn, Ga.
Gilbert, William T.	724 Piedmont Avenue, Atlanta, Ga.
Gowan, Mrs. C. Lee	353 Broad Street, Athens, Ga.
Gower, William Cornelius	Monroe, Ga., R. F. D. No. 4.
Griffith, Roy	Danielsville, Ga.
Halliday, William Thomas	Lumpkin, Ga.
Harris, Gilford Lacey	Fayetteville, Ga.
Harrison, Sam Paul Henry	Crawfordville, Ga., R. F. D. No. 1.
Heath, Ralph B.	Howard, Ga., R. F. D. No. 1.
Hartley, A. L.	Harrison, Ga., R. F. D. No. 2.
Hendrix, J. Walter	Savannah, Ga.
Hess, Elam G.	Leary, Ga.
Hess, Mrs. M. E.	Leary, Ga.
Hodges, Robert Harry	Loganville, Ga.
Hodges, Fred Wright	Halcyondale, Ga., R. F. D. No. 2.
Holmes, Leonard Arthur	Ranger, Ga., R. F. D. No. 1.
Hunter, Robt. Sidney	Decatur, Ga.
Jackson, Edward Talbot	Carrollton, Ga.
James, C. M.	Columbus, Ga.
King, Bartow E.	Glenwood, Ga.
Lewis, William Crawford	Wellston, Ga., R. F. D. No. 1.
Logan, Franklin Ramsey	Madison, Ga.
Logan, Joseph L.	Waycross, Ga., R. F. D. No. 5.
Logue, Wm. Albert	Gibson, Ga.
Lyle, Jno. Clinton	Crawfordville, Ga., R. F. D. No. 2.
Manning, William Norman	Funston, Ga.
Marks, L. L.	Mansfield, Ga.
McElhaney, Blanton E.	Gladesville, Ga., R. F. D. No. 1.
Mooney, Benjamin Southard	Statesboro, Ga., R. F. D. No. 7.
Morgan, Stephens Edward	Union City, Ga.

Moss, Mrs. John D.	Athens, Ga.
Newsom, J. C.	Washington, Ga.
Oliver, Jonas Granberry	Macon, Ga., R. F. D. No. 1.
Owens, Samuel Feagin	Pinehurst, Ga.
Parker, Lonnie Lee	Daisy, Ga.
Pittard, Howard Julian	Winterville, Ga.
Pitts, David Jackson	Bowman, Ga.
Pittman, James Thomas	Attapulcus, Ga.
Pittman, Guy Thomas	Jefferson, Ga.
Polhill, John Goldwire	Sylvester, Ga.
Preston, John Wesley	Newton, Ga., R. F. D. No. 4.
Radford, Leo	Dublin, Ga., R. F. D. No. 4.
Rast, William Walter	Pidcock, Ga.
Reed, Alex. Hamilton	Eatonton, Ga.
Rice, G. E.	Augusta, Ga.
Richardson, Sinclair McMullan	Hartwell, Ga.
Saggus, Samuel Watson	Crawfordville, Ga., R. F. D. No. 1.
Sibley, J. Hart	Union Point, Ga.
Smith, Job Elbert W.	Waycross, Ga.
Smith, David Harrison	Swainsboro, Ga.
Smith, William Richie	Fender, Ga.
South, Jas. William	Martin, Ga., R. F. D. No. 3.
Summerour, Harrison	Duluth, Ga., R. F. D. No. 2.
Swain, Lewis Edward	Warrenton, Ga., R. F. D. No. 4.
Trapnell, John Gideon	Metter, Ga.
Thurmond, Sammie	Jefferson, Ga., R. F. D. No. 5.
Tucker, William Richard	Summerville, Ga., R. F. D. No. 3.
Tyre, James Bedo	Dublin, Ga., R. F. D. No. 5.
Ulhorn, A.	Waycross, Ga., R. F. D. No. 5.
Walker, Moses Wesley	Blackshear, Ga.
Walters, John Thomas	Gainesville, Ga.
Ward, Patrick Henry	Ochlochnee, Ga.
West, Jordan William	Ft. Gaines, Ga., R. F. D. No. 1.
Whitner, John Charles	Porter Springs, Ga.
Wicker, David	Americus, Ga.
Wilkinson, Robert Dawson	Deepstep, Ga., R. F. D. No. 2.
Yates, William Wyley	Temple, Ga.

SUMMER COTTON GRADING COURSE.

Anderson, Ernest	N. Augusta, S. C.
Brooks, Miss Willie May	Crawford, Ga.
Carswell, Jas. H.	Hephzibah.
Dootson, W. R.	Athens.
Ellenwood, Henry M.	Collins.
Ellinger, Alfred M.	264 Riverside Drive, New York, N. Y.

Gowan, C. Lee	-----	Athens.
Ligon, C. W.	-----	Asheville, N. C.
Lott, Wm. W.	-----	Jacksonville
Richardson, John M.	-----	Jefferson.
Scruggs, Richard L.	-----	Morven.
Stephenson, Mell M.	-----	Athens.
Taylor, Frederick B.	-----	Thomasville.
Van Roof, Milton	-----	216 West 99th Street, New York, N. Y.
Williams, Willis B.	-----	331 Barnard Street, Savannah, Ga.
Worrell, Lloyd	-----	Transvaal, Africa.

CORN CLUB BOYS' SHORT COURSE.

Adams, Cleveland	-----	Mansfield.
Akins, Lewis	-----	Statesboro, R. F. D. No. 1.
Balcom, Ichabod Lafayette	-----	Georgetown, R. F. D. No. 1.
Boatright, Moses Watson	-----	Blum.
Bolton, Byron	-----	Zeigler.
Bradford, Leo	-----	Dublin, R. F. D. No. 4.
Bradley, Hubert	-----	Blaine, R. F. D. No. 2.
Bryant, Robert	-----	Chipley, R. F. D. No. 1.
Colquitt, Paul Allen	-----	Columbus, R. F. D. No. 1.
Finney, Henry Lawton	-----	Haddock.
Fountain, Tom Lester	-----	Reynolds, R. F. D. No. 1.
Gay, Joseph Reid	-----	Mathews, R. F. D. No. 2.
Godbee, John	-----	Girard, R. F. D. No. 3.
Goddard, Early J.	-----	Griffin, R. F. D. No. 1.
Hearn, Caughey	-----	Bellville.
Helton, Wm. Lee	-----	Toombsboro, R. F. D. No. 2.
Henderson, Paul	-----	Varnell, R. F. D. No. 2.
Hendricks, Joseph A.	-----	Buena Vista, R. F. D. No. 3.
Hill, Monroe	-----	Oglethorpe, R. F. D. No. 4.
Hogan, Rudolph	-----	Mystic, R. F. D. No. 1.
Hunt, Jesse R.	-----	Rome, R. F. D. No. 6.
Joiner, Charles	-----	Dublin, R. F. D. No. 5.
Jones, Roper	-----	Calhoun, R. F. D. No. 4.
Jones, Robt. C.	-----	Thunder, R. F. D. No. 1.
Lucas, J. Orin	-----	Quitman, R. F. D. No. 7.
Lynn, Raleigh B.	-----	Glennville, R. F. D. No. 3.
Marchant, Clarence	-----	Milan, R. F. D. No. 2.
Miller, Marshall G.	-----	Luthersville.
Nixon, Abner	-----	Carrollton, R. F. D. No. 6.
Pippen, Clarence	-----	Culloden, R. F. D. No. 1.
Pitts, Ernest	-----	Bowman.
Reese, Clyde Bowdon	-----	Gentian, R. F. D. No. 1.
Rhodes, George Augustus	-----	Crawfordville, R. F. D. No. 1.

Smith, Charles Bryan-----Rockmart, R. F. D. No. 2.
 Wellborn, Edward G.-----Madison, R. F. D. No. 4.

GIRLS' SHORT COURSE.

Andrews, Exabal -----Watkinsville.
 Atkins, Love-----Summerville, R. F. D. No. 3.
 Butler, Lily-----Rome, R. F. D. No. 9.
 Campbell, Ethel-----Rockmart, R. F. D. No. 3.
 Darcy, Lucile -----Whigham.
 Echols, Bernice -----Jefferson.
 Field, Lucile-----West Rome, R. F. D. No. 8.
 Hardeman, Louise-----Winterville R. F. D. No. 2.
 Kitchens, Annie-----Dallas, R. F. D. No. 6.
 Monroe, Jessie -----Metcalf.
 Rogers, Mary L. -----Faceville.
 Simms, Josephine-----Rome, R. F. D. No. 6.
 Wicker, Carrie-----Andersonville, R. F. D. No. 1.
 Wilson, Miriam-----Eatonton, R. F. D. No. 1.

SUMMARY OF REGISTRATION, 1912-1913

COLLEGE OF AGRICULTURE.

M. S. in Agriculture-----	6
B. S. in Agriculture-----	125
One-year Course -----	44
Special students -----	10
Short Courses -----	100
Summer Cotton Grading Course-----	16
Corn Club Boys' Short Course-----	35
Girls' Short Course -----	14
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	350
Counted twice -----	2
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Total registration -----	348



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